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The
GEOGRAPHICAL JOURNAL

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ADDRESS AT THE ANNUAL GENERAL MEETING

of the Society, held on 21 June 1943, by the President

THE RIGHT HON. SIR GEORGE CLERK, G.C.M.G., C.B.

THE Bye-Laws provide that the first of the Agenda for the Annual General Meeting is the Presentation of the Gold Medals and other Awards of the Society. This year there are neither Medals nor Awards.

The interruption of geographical exploration and research during the years of war has inevitably restricted the field of civilian candidates for the highest honours, and it is not yet possible to assess the relative importance of the geographical work done in the course of military duty by officers of His Majesty's Forces. It therefore seemed proper to the Council that they should ask permission of His Majesty The King to postpone to a happier day the honour of recommending the names of two geographers worthy to receive the Royal Medals for the year 1943.

This request having been submitted to The King by the Keeper of the Privy Purse, His Majesty was graciously pleased to accede to it, and to say that he thoroughly appreciated the reasons for its submission.

The Council had at the same time resolved that there should be no award of the Victoria Medal this year, and that the lesser Awards of the Society, usually made at this meeting, should be postponed. The amounts of the four Awards, provided by investments which the Society has in trust, will be held in the Trust Funds.

The Society has to mourn the death during the year under review of its Honorary President, of two Past-Presidents, and of several distinguished Fellows.

His Royal Highness the Duke of Kent was killed in a lamentable accident on August 25 while he was flying on military duty to Iceland. When he consented last year to succeed his great-uncle the Duke of Connaught as Honorary President of our Society we hoped to be able to rely on his support and help for many years, for he was a Prince of great qualities and accomplishments, and it was with a heavy heart that the President represented the Society at the

funeral of His Royal Highness in St. George's Chapel, Windsor. But I am happy to say that the name of His Royal Highness still remains closely associated with the Society, for the Council, with the gracious permission of His Majesty The King, asked the Duchess of Kent to take up the position so tragically left vacant and Her Royal Highness has honoured us by accepting the Honorary Presidency.

At the Annual General Meeting forty-five years ago Major Leonard Darwin was elected President in succession to Sir George Taubman Goldie, having served for fifteen years as Honorary Secretary, throughout the long presidency of Sir Clements Markham. Endowed with a full share of the scientific talent inherited by Charles Darwin's sons, he was eminently fitted to be President during three dramatic years in the history of the Society. Two out of the five Special Gold Medals which have been awarded in our one hundred and thirteen years for especially great achievements were given in those three years: to Shackleton in 1909 for reaching in the Antarctic the highest latitude ever until then reached by man, and to Peary in 1910 for his long career of polar exploration, culminating in his attainment of the North Pole. It fell to Major Darwin also to decide what if anything should be done about the rival claims of Cook, and to preside at the special meeting on a Tuesday afternoon when Sven Hedin's proposals for Trans-Himalayan nomenclature were so fiercely argued in the explorer's presence. In summing up the rival nomenclatures the President as a true Darwin remembered that he had been brought up in the doctrine of the survival of the fittest. One thing more from his distinguished record should be mentioned to-day. He started the movement for a better House and a worthy Hall for the Society, and insisted that the Hall should commemorate great British explorers: hence the fifty names inscribed in gold on the panelling.

Lieut.-Colonel Sir Francis Younghusband, thirteen years younger than Major Darwin, became famous so early in life by his historic journey across Asia in 1886, that he was awarded the Founder's Medal in Darwin's first year on the Council. By the time he was twenty-eight his three great journeys had made his fame as an explorer; at forty-one his distinguished conduct of the Mission to Lhasa had brought him fresh fame in a different field. In 1911, soon after his retirement from the Indian Political Service, he was elected to our Council and served on it continuously until his death last year, being an Honorary Secretary from 1914 to 1916, President from 1919 to 1922, and in 1920 first chairman of the Mount Everest Committee, in which position the patient tenacity of purpose which he had shown in Lhasa was equally required. He allowed no proposals for scientific by-products, however important, to divert him from the main and to him supremely important purpose, to reach the summit: not as an athletic achievement but as a supreme test of man's power over natural obstacles, an act of faith. For twenty years after his office as President, he served as Vice-President, not attending continuously, but always to be relied upon in a case of difficulty or delicacy. Having been mature in his youth he was young in his old age, working untiringly as President of the World Congress of Faiths until his death at seventy-nine. Fellows will like to know that, thanks to the kindness of Sir Francis Younghusband's family a bronze bust of Sir Francis will preserve his memory in this house.

Norman Collie was an organic chemist, Professor and Director of the Laboratories at University College for many years, but to us a renowned explorer and climber in the Rockies and the Himalaya, and the Lofoten Islands, and in Skye, one of the first to practise the present-day form of guideless mountaineering, a President of the Alpine Club and of the Mount Everest Committee, in succession to Younghusband, and for two terms on our Council.

Major-General Sir Cecil Pereira, who had been on our Council since 1938, was a distinguished officer of the Coldstream Guards, who early in his career saw service in the Niger Territory, Uganda, and South Africa, and rose to command the First Guards Brigade and the Second Division during the war of 1914–18: a Fellow of our Society for more than fifty years and always at our Meetings during the last few years.

Colonel Sir Sidney Burrard had spent nearly his whole life in the Survey of India, and was Surveyor-General from 1910 until his retirement in 1919. In 1901 he had published his celebrated memoir on the attraction of the Himalaya upon the plumb-line in India; and in 1908 his important work in cooperation with H. H. Hayden on the Geography and Geology of the Himalaya and Tibet, and of the twenty thousand snow-clad peaks which lie within the field of the Survey which he afterwards directed. His name will always rank high in the history of that great service.

Captain G. T. McCaw was a mathematician who had spent his whole life in the higher branches of Survey: on the Geodetic Survey of South Africa, with Brigadier Jack in Uganda, on photographic survey in Fiji, at Maps G.H.Q. during 1914–18, and then as mathematical adviser to the Geographical Section, General Staff, Secretary of the Air Survey Committee, Editor of the Empire Survey Review, and a frequent contributor to our technical meetings and to the *Journal*.

Geoffrey Milne had been the soil specialist of the Amani Research Station in Tanganyika, made the first soil map of British East Africa, and was engaged on the first vegetation map. His death at forty-four is a severe loss to the scientific services of the Empire.

L. H. McCabe was a member of two Cambridge Expeditions to Iceland while still an undergraduate and took his own party to Spitsbergen in 1938; was then a surveyor in the Colonial Service, and was killed in action at Hong Kong on Christmas Day 1941.

The Reverend A. J. Potter was known to many Fellows, for he had been for thirteen years a member of our Library staff, with varied special knowledge, of the Magyar language, and of ingenious devices in calculation and graphical methods of map construction. Soon after the outbreak of war he reverted to clerical duty, and died suddenly as Vicar of North Holmwood in Surrey.

The Council Report sets out the present rank, so far as we know, of those members of the Staff now on service. In one way or another they are all turning to good military use the special knowledge they have acquired with us, and there have been no casualties among them during the year. But we have in the last few weeks suffered a grave loss in the sudden death of our

senior draughtsman, Mr. F. J. Batchelor, who had been in our employ for over fifty years. The Karakoram Map, published in 1940, is the supreme example of his skill.

For two whole sessions we were compelled to decide that Evening Meetings were inadvisable, and that all, whether those of general interest or for the discussion of technical subjects, must be held not later than 5.0 p.m. When we planned the session of 1942–43 conditions had so much improved that we felt justified in announcing one meeting a month at 8.0 p.m., on dates when the Moon was between first quarter and full, so that it should not be too dark to find our ways home. I am happy to say that the Moon appreciated the compliment and has shone brightly for us on those evenings. The attendance at the 8.0 p.m. meetings has been good, and I believe that Fellows who are hard at work during the day have appreciated them. The audiences at 5 p.m. and at 8 p.m. have been different, which in itself justifies us, I think, in continuing the arrangement next session. We have however found that the 5 p.m. meetings are difficult for those who are doing war work in Oxford or Cambridge. Therefore, we propose to have one technical meeting a month at 3 p.m. during the winter months.

It is hard in these days to make a good programme, and impossible to have quite so many lectures as in peace time, because our geographers in the field are not all at liberty to come home and inform us at once of all that they have been doing. I look forward to a rich harvest of lectures of absorbing interest when peace is restored to us, but meanwhile I confess it is tantalizing to catch glimpses through the fog and mystery of war of the experiences that our geographers are accumulating. For instance, Fellows may remember that in March 1942 we hoped to have a lecture by Brigadier Wingate on Abyssinia, but shortly before it was due he told us that "military duties" made it impossible for him to carry out his undertaking. Little did we realize the nature of those "duties" until a short time ago when we read the amazing story of the achievements of Brigadier Wingate and his seven hundred men in the forests of Burma. For the present I think we may say that a session in which we have had such admirable lectures as those by Miss Mildred Cable on A New Era in the Gobi; by Captain W. E. D. Allen on the Ethiopian Highlands in war time; by Miss Evelyn Cheesman on the scene, which she knows so well, of the Japanese operations in New Guinea; by Mr. Wibo Peekema of the Royal Netherlands Government Service, on the Javanese Colonization of Sumatra; and by Sir Percy Loraine on Perspectives of the Near East, to name only some of our Evening Meeting subjects, has not been so bad in war time. And the more technical subjects which we used to reserve for Afternoon Meetings, such as the Discussion of the Scott Report, opened by Dr. Dudley Stamp, or the study of the geography of the Italo-Yugoslav boundary, by Dr. A. E. Moodie, have drawn equally good audiences, not entirely of specialists, so that the distinction between meetings of general and of technical interest tends to disappear.

It is a melancholy but inevitable result of war that our *Journal* should be diminished in size, partly by lack of material, and more by the shortage of

paper. It was no time, then, at the end of last year to celebrate the completion of its hundredth volume by an issue of unusual size and quality. We could do no more than to review briefly in the first number of Volume CI the interesting changes in style and process, especially of maps and illustrations, that the *Journal* had exhibited in its fifty years of life; to remark that in those fifty years it had had only two Editors, that our Librarian Emeritus had written something for almost every one of its six hundred numbers, and that the long service to the Society of our senior draughtsman had very nearly covered the whole period.

Of the Society's special publications, the two volumes of 'Hints to Travellers,' Eleventh Edition, published in 1935 and 1938, have had a steady sale during the war, and have without doubt been found useful to many of our Fellows, officers and men, on active service. It is interesting to see how many of the younger travellers who are thanked in the introduction to Volume II for their contributions on outfit and equipment, rations and camp routine, transport and communications, are now making new reputations in sterner fields. The Map of Europe and the Middle East, ranging from Iceland to Chungking, which the Society made, and published for the British Council last autumn, is also playing its part on the walls and tables of Command headquarters as well as in less august hands. It may be recommended to all who are more interested in the representation of the land as it was made by nature, rather than in the way it has in parts been developed by man. It does not attempt to show the great multitude of names which occur in the detailed reports of operations; but it does show, better we think than any other map of its extent, the relief of the land and its physical structure. It was a bold experiment in a new process, and we have good reason to be pleased with the result.

The war has completely interrupted the Society's normal duty of assisting expeditions in the field, but has thrown upon the diminished staff much work in satisfying the demands on our Library and Map Room made by Intelligence Branches of the military forces and various Departments of the State. It has been a particular pleasure to give facilities for the work of specialists from enemy-occupied countries, working for their Governments established in London. We have from time to time invited the officers of the Dominions and Allied Forces to avail themselves of our resources in books and maps and photographs. Our staff have had the pleasure of many interesting discussions with them, and we have been pleased to see some of them at our Meetings.

PERSPECTIVES OF THE NEAR EAST

SIR PERCY LORAINE

Meeting of the Society, 10 May 1943

FIRST, a reference to the question of terminology, because unless there is a clear understanding in that respect to start with it is not unusual to discover great confusion before one ends. In the title of my lecture I use the term "Near East" which appears to have become almost completely obsolete, but when I was an appreciably younger man there used to be a Near East and a Middle East. Now apparently there is only a Middle East; and the title I chose for my lecture can be taken therefore as to some extent a mild protest against the process of unnecessary assimilation. I admit that the dividing line between the Near and the Middle East was not a very fixed one, but I think the three terms we used to employ of Near, Middle, and Far East conveyed, on the whole, a definite and useful conception which for my part, although I do not pretend to be a dyed-in-the-wool traditionalist or a pedantic theorist, I would rather preserve.

I have also another reason for using the term. I am much afraid that if the Middle East comes to be the recognized description of all the areas that we used to know and appreciate under the terms Near and Middle East and somebody begins talking about the Near East, it may be taken in a rather different sense, more in the light of near-white. My own definition of the Near East would be: the Balkan States, Egypt, and the coastal areas on the eastern shores of the Mediterranean and of the Black Sea. The Middle East I would describe roughly as being Iran, 'Iraq, Afghanistan, and the Arabian peninsula. However I shall allow myself a little latitude, in what I am going to say now, for some excursions westwards and eastwards from what may be regarded as, strictly speaking, the Near East. I am afraid too, I am going to touch on matters that are not strictly geographical in their context, but that is because I believe that many such matters which are largely political and strategical are tremendously dependent on geographical circumstances.

I now propose two postulates which I think you will later on realize are threads running through most of my remarks. The first postulate is that historical analogies—and so many people when they are judging of contemporary events seek for analogies in previous history in order to form their judgment about the manner in which those events are going to evolve—are largely unreliable unless they are based on an identity, or at least a strong similarity, of geographical conditions. My second postulate is that the strategy of wars is so much conditioned by geography that the anatomy of wars cannot be understood unless there is a reasonably sound appreciation of the geographical factors.

The truth of this, I think, is, and we are seeing it on the grandest scale in this war that has spread all over the world, that, thanks to the aggression of Germany, Italy, and Japan, most States are already involved in the war; and I think it is also entirely true to say that those States which are not involved in it owe their immunity either to a geographical situation which makes them

a difficult, or to alliances that make them a dangerous, object of aggression; or to a combination of those two. But in each case the geographical consideration is, for the purposes of war, the dominant one. Later I shall try to establish to your satisfaction that in the Mediterranean area, which is a vividly typical example of my thesis, geography has had a profound influence on politics as well as on strategy.

Please forgive me if I make one more terminological explanation. I have used the word "aggression," and I have used the word "war" because they are the current expressions for the two phenomena which fill and darken so much of our horizon. To-day I find that these terms are out-moded. Aggression is no longer epidemic and sporadic, for the Germans, the Fascists, and the Japanese have made it endemic and planetary; it is systematic robbery under arms. The war of to-day is not a mere resort to arms after failure by other methods to settle a quarrel. It is a deliberate and conspiratorial revolution against the concept of freedom plus responsibility within the law for State and individual alike, of which Britain, America, and France are the most prominent champions in the modern world and which is as necessary to the Anglo-Saxon as the very air he breathes.

I should now like to suggest to you which and why are the strategical points of the Near East. The first is the Caucasus, and I think anybody who shares or exceeds my experience in that part of the world will readily grant that the lord of the Caucasus is a most important and influential person. He has access to the Black Sea and the Caspian Sea, and he must have powerful influence either in a south-easterly or a south-westerly direction.

The second strategical point is the Straits (Dardanelles and Bosphorus). That is so self-evident that I need not dwell on it. If any emphasis on the importance of the Straits were necessary, surely it could be found in the series of international agreements which have been reached in regard to them; I would like to express the opinion and the hope that the last, the Montreux Convention, has approached, so far, nearest to the right one; and that is the Convention which definitely recognizes the major interests of the owner of both banks of the Straits, as well as the right of transit, on its peaceful and lawful occasions, of non-riparian users of this waterway.

Next, I name as a strategical point the Balkan highlands, because there is the key, on the landward side and westward side, to those Straits, and nobody who has responsibility for keeping open the Straits to the peaceful traffic of the nations can be indifferent to the character or temper or the political or military power of the men who occupy those Balkan highlands.

The next strategical point is the Anatolian peninsula. Between the three points I have mentioned there is to-day a striking similarity. The three points are the Caucasus, the Straits, and Anatolia. The similarity is this: the first and third are land between waters and the second is water between lands. If you follow history you will see that those are always the important strategical points. The Caucasus lies between two seas; Anatolia also; and the Straits separate two continents.

My next point, strategically, in this area is Suez, sharing in no less important a degree and in the same order of ideas, the importance of the Straits—a narrow sea connecting two great ones, and dividing two continents.

Lastly, the restricted area, Crete. If there were any doubt about the strategical importance of Crete, I feel it would have been dispelled by the strength, the determination, and the viciousness of the German attack on Crete and their evident resolve at any cost, and the cost was very heavy, to capture Crete. For why? Because, especially when its possession is coupled with that of the Dodecanese, it flanks the approaches to both those Straits, both those narrows.

To understand, if you will allow me to express my own opinions on this subject, the course of events that are taking place to-day we have to look back, at all events a little, into the past. I am not talking about ideologies or general political ambitions, but of factual aspirations. The principal factual point about the war of 1914–18 was the German conception of Germany's expansion in a south-easterly direction. The idea was a line under German control and influence from Hamburg to the head of the Persian Gulf. It sounds extremely ambitious. It was. They did not however miss it by so very much. What some realized before, and many realized afterwards, was that it was not a mere question of laying a few thousand miles of rail; it was a question of opening up that part of Asia, especially Syria and 'Iraq, to a virtual monopoly of German economy, and as an outlet for the plantation of German colonists. That aspect of the matter I will deal with a little later in more detail.

But if that was the grand German scheme from 1914–18, the question certainly arises why has the pattern of the German campaign since 1939 followed, apparently, a very different course indeed? The answer centres on Turkey. With Turkey as an ally the scheme presented every possible advantage to Berlin and, as Turkey found out during and after the last war, a great many varieties of disadvantage to Turkey. But that is not quite the only answer. If you postulate, and you safely can, that the line I have indicated on the map was the line of expansion that was militarily easiest and economically most remunerative, and from the point of view of Germany's enemies the most damaging, you will see that the width of the German corridor through which these ambitious schemes could be pushed was a very considerable one. Indeed, the width of the corridor was from Sinai to Ararat. As I have already said, they were not so very far off succeeding, but they did not succeed and certain changes after the German defeat were effected. That wide corridor between Sinai and Ararat was the position in 1914, postulating that Germany could secure Turkey, or rather the Ottoman Empire, as her ally.

Examine the corresponding conditions in 1939. To begin with, the Turks were not at war, nor were they hostile to their great Russian neighbour. In the second place, Syria was a considerable territory under French mandate, and south of that there was another territory, Palestine and Transjordan, under British mandate, and then there was Sinai, a province of that ancient and fascinating country, Egypt, which had become an ally of Britain. Yet another country, another of the cradles of civilization, 'Iraq, was also an ally of Britain. And the vast Arabian kingdom, ruled by Ibn Sa'ud, is one of the staunchest and most generous friends that Great Britain has ever had. So what happened to the corridor? It no longer stretched from Sinai to Ararat. It had shrunk to the width of the Anatolian peninsula.

Now perhaps I have illustrated my initial thesis, that the answer to the

question in 1939 depended largely on Turkey. But the Turkey of 1939 was not available as an ally to Germany. By that time Turkey was an ally of Britain. Why did Turkey, shorn of her empire, drained of much of her manpower, gravely weakened in her financial and economic structure though showing wonderful vitality and powers of recuperation, wish to reach an agreement of understanding, friendship, and eventual alliance with Great Britain? The policy designed by Kemâl Atatürk, welcomed by the Turkish people and their representatives, carried out by the Turkish Government and by President Ismet Inönü, gave the clear answer to that question. The Turks who are in power to-day knew when Turkey joined Germany in the war in 1914 that whether Germany won or lost that war Turkey was going to lose it. She did. So did Germany. And the Turks paid the price of the pledges which the Young Turks, the men of the Committee of Union and Progress, had given to Germany. That price was the Ottoman Empire. What remained was a Turkish Turkey. The Kemalist Turks had no disposition to fight again on Germany's side if the price was to be territory under Turkish rule. They had their Turkish Turkey and that they meant to keep. They had not a second Ottoman Empire to pay for a second war as Germany's ally. So they had to take a view, and their view was this: that with the territory that remained to them, shrunken territory by comparison with the old Empire but still a very considerable one and possessed of great natural resources, they had plenty on their hands to do and quite enough to keep them busy in peace for one or two hundred years. So they had decided three things: Firstly, that they were content with their frontiers; secondly, that they did not wish to rule again over non-Turkish populations; thirdly, that they wished the former non-Turkish areas which had been split off from the Ottoman Empire to enjoy, in their turn, full national liberty and to constitute reputable States with whom Turkey could entertain friendly and neighbourly relations. But that was not all. That concerned their own domestic affairs. There was also the question of their foreign relations. And there they decided on, and followed, a policy of reconciliation and concord.

I hope I have not drifted too far into what are apparently purely political considerations, but I suggest again that so many of the grounds that dictated these wise decisions of the Republican Turkish Government rested on an appreciation of geographical and physical considerations that they are proper matters for discussion in this Society.

Consider what the position was. Obviously the longest and most vulnerable frontier of Turkey was that with Russia: the whole of the Black Sea littoral and a mountainous land frontier on the Caucasus. The healing of the old breaches with Russia, or the burying of the old hatchet with Russia was, in the light of past history, a remarkable performance. Then there was the European frontier; what did Turkey do about that? She signed the Balkan Pact with Romania, Yugoslavia, and Greece. She would have signed it with Bulgaria, but Bulgaria was not willing to sign. Bulgaria preferred to nurse her grievances rather than settle her difficulties. Therefore the northern frontier and the western frontier became as secure as anybody can hope for through the agency of diplomatic action. Then there was the east, which they covered by the Sa'adabad pact of non-aggression with Iran, 'Iraq, and

Afghanistan. What remained? The Syrian–Turkish frontier: no cause for alarm there except for a few raiders and smugglers. The relations between Turkey and France had for so many years been excellent. Granted that, what remained? The long indented stretch of seaboard from the Straits right round the western and southern sides of the peninsula. When people heard Signor Benito Mussolini addressing his faithful Fascists from the balcony of the Palazzo Venezia and telling them that Africa and Asia were the proper spheres for the expansion of the Imperialist Italian race, it is not to be surprised at that these speeches had a certain echo in Ankara, the more so when islands very close indeed to that particular corner of the Turkish coast were in Italian possession. The fact of possession did not worry the Turks; but then the islands were fortified. I do not say that worried the Turks unduly, but it certainly made them put a further query mark to the ultimate intentions of the rulers of Italy, a query mark to which their previous experience of descent by Italian forces on another Turkish possession in 1911, Tripolitania and Cyrenaica, lent particular point.

But besides the importance for Turkey of the Anatolian peninsula, besides its natural strategical importance, being a projection of the continent of Asia towards Europe, separated only by those narrow Straits, and as a land mass between two considerable seas, it has another importance. I hope that I have demonstrated my reason why Turkey was not particularly desirous of renewing her acquaintance in alliance in arms with Germany.

But I must explain also how the Turkish disinclination in that respect has compelled the Germans in the series of aggressive wars that they began in 1939 to follow a quite different pattern from that which they followed from 1914–18. I am not saying that they would not have liked to repeat the 1914–18 pattern. I think they would have. They could not because the Anatolian peninsula was not at their disposal. The Germans would very much like to have had that peninsula at their disposal because it leads to a number of things that they would very gladly have the disposal of. I only mention at this moment one: oil. Because the Anatolian peninsula was not open to them the Germans have had quite a long walk round the northern shores of the Black Sea, of which they have not got near to the end yet, in the hunt for oil. In other words, those who want to get to the Caucasian oilfields from the west have either to walk round the northern end of the Black Sea or go through Anatolia or along the Anatolian coast. But if they have ambitious eyes on other oilfields, such as those in south-west Persia, those in the Bahrein, or those near Khanikin, or the oilfields at Mosul in 'Iraq, the Anatolian peninsula covers the road from the west to every single one of those oilfields.

As I have said, the process of reconciliation between Turkey and her neighbours, at least many of her neighbours, who had been subjects of the former Ottoman Empire, went apace and the question of that vulnerable stretch of coast in the Eastern Mediterranean was solved by the understanding with Britain and the alliance to which it led between Turkey, Great Britain, and France. The fruits of that alliance are, I think, manifest. If they were not, the recent and memorable meeting between the Prime Minister of Britain and the President of the Turkish Republic at Adana, has made it very

vivid in our minds. But in mentioning that meeting we should remember what the Prime Minister said in the House of Commons when he returned to London. He then warned us to read nothing more into his statement than he had actually said. If I may add something on my own behalf, let us not try to peer into the future, but let us be absolutely confident that Turkish honour is safe in Turkish keeping.

Although my terms of reference, strictly speaking, limit me to speaking of the eastern end of the Mediterranean, immensely important as I say again it is because of its northern outlet through the Straits to the Black Sea and its southern outlet through the Suez Canal to the Red Sea and the Indian Ocean, I should like for a moment to take the Sea as a whole as an example, and a particularly illustrative one, of world communications that must, in my opinion, take a prominent place in the post-war settlement.

I think it can be taken as axiomatic that the economic life of this world depends on keeping open the east–west or, shall I say, the horizontal communications, and whenever an attempt has been made to cut across, or to drive a wedge of force across, the horizontal line of communications there has been a bitter and bloody war. For example the idea of which I have spoken of a line from Hamburg to Kuweit being under German control which cut right across a vital line of horizontal communication that everybody wants to use. There is in that instance exactly the position which in the opinion of, I believe, a great many responsible writers rendered inevitable the attacks by Syria, Assyria, and Babylonia on Judah: the people in the hills of Judah stood across the necessary lines of communication and levied unseemly toll on them. Whether that is historically accurate or not, that suggestion is an apt illustration of my point. The conception of the Axis is just such another attempt. The line of the Rome–Berlin axis runs north–south from the Baltic, across Europe, across the Mediterranean and right into Africa, and cuts across east–west communication. The third example is Japan. Japan is thrusting southwards and northwards and, if she is successful, she will interrupt the life-lines of communication and trade so essential, at all events, to Britain, America, China, and Russia. If you accept that as a dominant consideration you will notice that it is associated with rather a peculiar phenomenon, which is that every time the attempt is made to drive a wedge of force across main horizontal world communications it is the peoples who believe in freedom who resist the attempt and those who believe in force who try to cut the communications.

You may say that on the present occasion the Axis Powers are securing their own lines of communication. True, but at the cost of others and in order to have complete control in the Mediterranean. I suggest that history shows that there is an alternative and better method and that is the method which this country of ours has followed.

Consider the extraordinary importance to Britain of the Mediterranean as the main sector, and the most difficult sector, of her communications with the East, and of the steps that Britain has taken to ensure freedom of communication through the Mediterranean. There are only two strong points held by Britain between the Pillars of Hercules and the Suez Canal: Gibraltar and Malta. There are half a dozen or more States lying on the flanks of those

communications. We have never sought to dominate those States. We have been friends with Spain; we have been friends with France. We welcomed the liberation of Italy. We have been friends with Greece; we have been friends with and we are allies of Turkey. We are allies of Egypt. To ensure the security of those communications, which every other State can share with us, we have not placed large garrisons in other people's countries. We have sought, and we believe we have earned, their friendship.

All this leads me up to perhaps a rather venturesome conclusion. The President of the Society will remember as well as I do the main instructions given to what were known as the Territorial Commissions of the last Peace Conference. Those Commissions which were to recommend the frontiers of new or succession States were given a broad reference that the first consideration was to be ethnical, the second economic, and the third strategic; but as regards the third consideration a rider was added which was that if any of the Territorial Commissions of the Peace Conference at any juncture of their deliberations thought that a strategical consideration was of such importance as to override the ethnical and economic considerations they must at once report to the highest level, which was of course the Grand Council of the Allies.

If, as I think is generally agreed now, the security consideration must come first in the settlement after this war (and unless the United Nations can create a system of security not merely for individual States but for all nations the rest of what may be done will inevitably melt into moonshine) then I suggest very tentatively that perhaps the solution may be found in putting the strategical considerations first and not last, with this enormous difference: that the strategical considerations will be measured not in the terms or interests of a single State or a group of States but in the collective interests of all the United Nations and those who may wish to join them.

Sir Percy Loraine concluded his lecture with some entertaining reminiscences of his journey down the Euphrates in 1907.

DISCUSSION

Before the paper the PRESIDENT (The Rt. Hon. Sir GEORGE CLERK) said: The paper this evening will be read to us by Sir Percy Loraine. Sir Percy, who is an old colleague and an old friend of mine, is going to speak on "Perspectives of the Near East." I, knowing what brilliant work he has done in the Near East, am quite sure what we shall hear will be well worth listening to. Sir Percy combines most of the qualities which make a really successful diplomatist, none of which I have. He has the capacity for silence when it is necessary and a capacity for concealing his thoughts in brilliant eloquence when it is even more necessary. What he is going to say to us this evening will, I think, be just plain interesting history. I ask him now to read his paper.

Sir Percy Loraine then read the paper printed above

The PRESIDENT: Sir Percy Loraine has represented his country in Persia, Egypt, Turkey, and in Greece. He has been in the closest contact with those who have directed the fate of the inhabitants of those countries of which he has been talking this evening. That friendship which has so happily established itself between the Turkish people and ourselves is in very great measure due to Sir Percy's efforts.

He has spoken to us with most unquestioned authority. If I may venture to say so, he has brought out what I believe to be one of the basic features of political growth. You cannot have political and economic growth unless you know and study geography. Sir Percy made an interesting suggestion when he spoke of the horizontal economic line, if I may boil it down to those words. If you will think it over you will see what immense truth there is in what he said in that connection. He showed us on the map where Turkey plays a role of inestimable importance in the development of civilization, progress, and economic happiness in Europe and therewith throughout the world.

The lecture to which we have listened has been a lesson of great value, and I shall have you wholeheartedly with me when I express to Sir Percy Loraine our thanks for what he has told us.

NOTES ON GLACIAL EROSION AND STONE STRIPES

THOMAS HAY

U- and V-shaped valleys

IT has often been pointed out how unsuitable in some ways these terms are for the glacial trough and for the water-cut valley. The former has very rarely got a cross section like the famous Lauterbrunnen valley where the resemblance to the letter U is really applicable; generally it is a wide open valley with a more or less catenary cross section. The river valley can only preserve any close resemblance to a V when the incision is recent and the erosion in a very active state. But the names bring out the distinction between the two types and are useful.

Not long ago geologists meeting in the north of England were looking down a Pennine valley and one of them pointed out that, judging from the shape of the valley, it had not been glaciated. Although it had probably been filled with ice at the maximum glaciation, doubtless there had not been enough gather to provide sufficient ice, and it had never been moulded into a glacial trough but had preserved its V shape. At the lower end of the valley there was a considerable morainic deposit which had all the appearance of having come from that particular valley. Yet quite close at hand there lies High Cup Nick with its famous circle of cliffs and well-formed U valley, though it has an even smaller gather than the former valley, for immediately above the cliffs it runs out on a flat plateau.

All this was rather confusing and intriguing. But there are other facts which must also be fitted into any general explanation. The lower end of the Glenridding valley is wide open and U-shaped, the middle part is constricted and V-shaped, the upper part again opens out and is U-shaped. Enough allowance is rarely made for variety in texture of the rock and especially for the presence or absence of joints. But even remembering this, there was clearly some other factor wanted to bring all these anomalies into order. It was only after a lot of uncertainty that the reconciling factor was found in an article by Henri Onde in volume 27, 1939, of the *Revue de Géographie Alpine*.

It is entitled "La Maurienne et la Tarentaise (deuxieme partie) cols et vallées."

Henri Onde believes that the U-valley may change gradually but within a limited distance into a V-valley simply by the change from a gentle slope to a steeper slope: on the steeper slope the ice moves more quickly, the erosion is less, and the V-shaped valley suffices for the passage of the ice. In treating of "Auges en U et en V" he writes, "Parfois enfin, à l'auge en U succède en l'espace de quelques kilomètres, une vallée en V d'allure *faussement fluviatile*." (The italics are mine.) In another place he says, "mais la transformation graduelle le long d'un même thalweg, au profil en U en profil aigu exclut l'intervention de deux outils différents et implique l'unité du modelé." In other words the V parts are equally glacial with the U parts and are not fluviatile. This idea, entirely new to me, that the U-ness or V-ness of the valley might depend on the speed of the ice and thus on the inclination of the valley was so illuminating that I determined to put it to the test of measurement. This would show whether the idea helped to explain the mystery of the Pennine valleys.

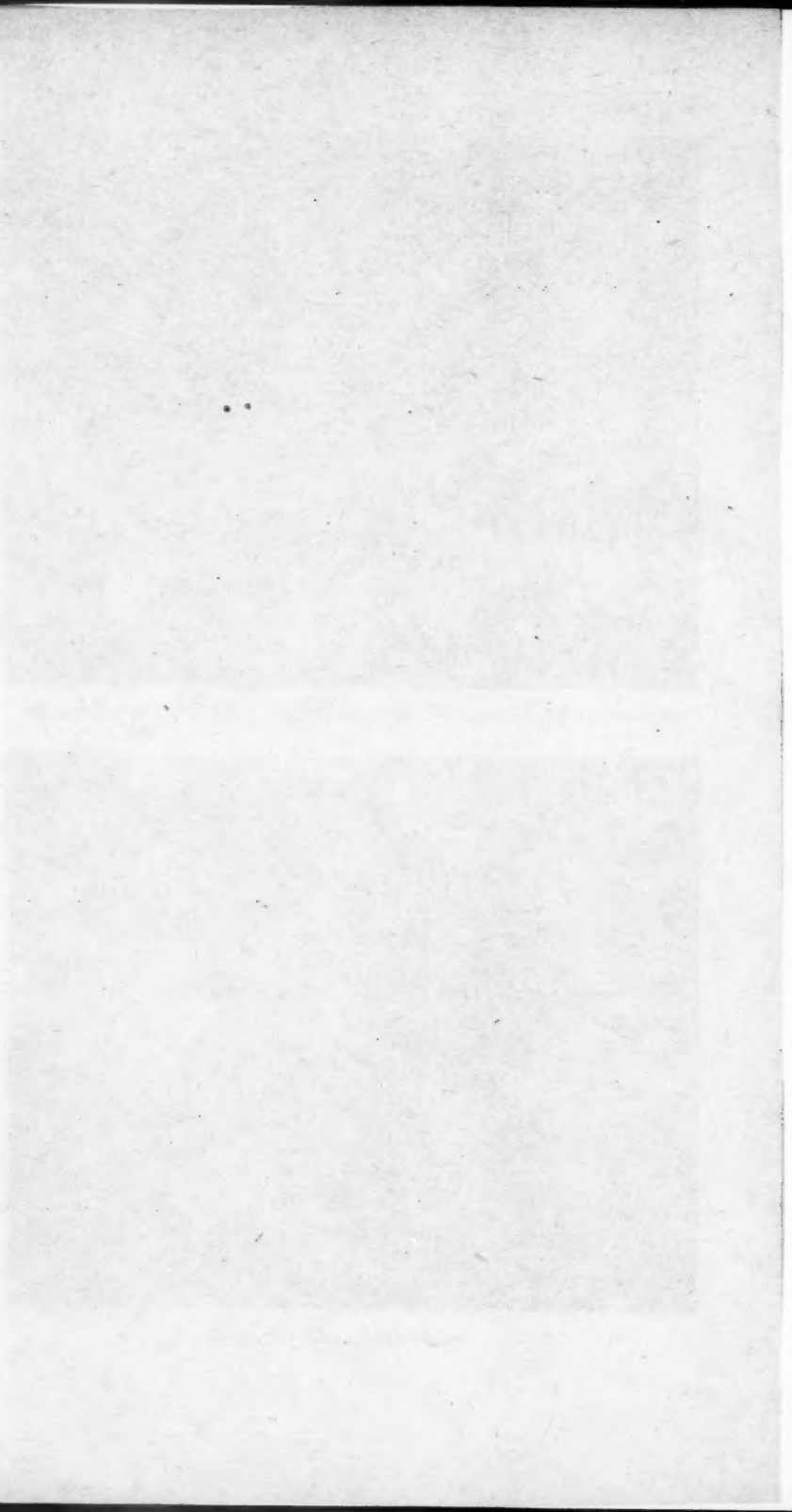
All measurements were made upon the O.S. 6-inch sheets. From where High Cup Gill cuts the 1250-foot contour to where it cuts the 800-foot contour by measurement is 11,200 feet; in Swindale, the V-shaped valley which runs parallel with High Cup Gill, there are 6800 feet between the 2000 and 1000-foot contours. The inclination of Swindale works out at over three times that of High Cup Gill. In the Glenridding valley the V-shaped part comes where the inclination is greatest: by measurement the lowest well-opened part falls 300 feet in 5100 feet; the middle or V-shaped part falls 200 feet in 1270 feet, and the upper well-opened part falls 500 feet in 4530 feet. By dividing the height by the horizontal distance for each section the tangents of the average inclinations are found. The angles of inclination are taken from Tables, and for the sections given are in the ratio of 1 : 2·66 : 1·87.

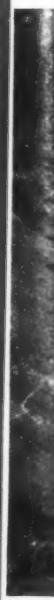
A striking example occurs with the sequence of U-shaped Seathwaite valley, V-shaped Taylor Gill Force, and U-shaped Styhead Gill. Seathwaite valley falls from 600 feet to 400 feet in 5280 feet by measurement. Taylor Gill Force section, which is not a mere flat-walled cascade like Sour Milk Gill but a real V-shaped valley, falls from 1000 feet to 600 feet in 1280 feet. Styhead Gill falls from 1435 feet at Styhead Tarn to 1000 feet in 3950 feet. The inclinations for these three sections are 2° 10′ : 17° 21′ : 6° 33′ or almost exactly 1 : 8 : 3, with the steep middle section again V-shaped.

Falling down to Stockley Bridge there is another V-shaped valley occupied by Grain Gill. Above the bridge Grain Gill falls 400 feet in 3300 feet, whereas the U-shaped Seathwaite valley, as we have seen, has a fall of 200 feet in 5280 feet. The relative inclinations therefore are 16 : 5, with the V-shaped valley in the steep portion.

Newlands valley, as seen from the top of Dale Head, is one of the most beautiful views in the district. The long U-shaped valley has Skiddaw lying as a background. In this valley the fall is 200 feet in 5700 feet: almost exactly comparable with Seathwaite valley.

Stonethwaite valley, Greenup Gill, and Greenup Combe form a succession exactly analogous to that of the Seathwaite valley. Here the inclinations are as 1 : 6·3 for the ratio of the lower U-shaped part to the middle steep part.





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1. V-shaped Taylor Gill Force leading down to U-shaped Seathwaite valley

2. U-shaped Seathwaite valley

3. Looking up U-shaped Longstrath valley

4. Rosthwaite Bridge; Castle Crag above the keystone

These examples show that Onde is right in his opinion that a U-shaped valley, by an increase of slope, may gradually but within a short distance change into a V-shaped valley. The fact that the V-shaped valley has sufficed for the passage of the ice owing to the swifter flow of the ice in that part of the descent further implies that a valley cannot be classified as non-glaciated simply because it is V-shaped. This argument is not concerned with the relative amount of excavation in shaping the valley, performed by the action of ice on the one hand and water on the other, but solely with the presentation of the idea that a V-shaped valley, where the inclination is steep, has sufficed for the passage of ice which on a more gentle slope needed a U-shaped bed for its transit.

Glacial erosion and remainder moutonnée rocks

There is a natural attraction about the idea that the amount of erosion effected by an ice stream will vary with the depth and the velocity of the ice and that it will increase as these variables themselves increase. But this is evidently not always true. The question is complicated by the nature of the erosion effected by the ice. It may consist of grinding which results in the production of rock flour and of moutonnée rocks, or of the bodily removal of blocks of rock, including all forms of plucking. When the jointing of the rock facilitates plucking it seems likely that the erosion is much greater than that produced by grinding. But these two processes are so utterly different that it is no wonder if some views have been expressed which, if true for one form of glacial erosion, are not true for the other, and consequently may not be true for the sum of these two.

Few authors seem to touch on this question, but de Martonne, in his 'Traité de Géographie Physique,' vol. II, p. 877, deals with it and specifies three variables which can influence the result. They are the speed, depth, and "adhérence" of the ice. But apparently his analysis is concerned with the grinding process only. I find one paragraph very difficult of exact application. He says, "On doit conclure que si la pente du glacier varie, comme c'est généralement le cas, l'usure du lit par frottement n'atteindra pas son maximum ni là où la pente est la plus faible, ni là où elle est la plus forte, mais là où, cette pente diminuant ou augmentant, le produit des trois variables, qui en dépendent, l'une en raison directe, les autres en raison inverse, atteint la plus grande valeur. Il en est ainsi au-dessus et au-dessous des ruptures de pente, comme le montre le schéma, figure 334."

Apparently the "adhérence" refers to contact only between the ice and the rock. De Martonne points out that it is at these breaks of slope that the adhérence is discontinuous owing to the faster motion and the formation of crevasses. But erosion by all forms of plucking may require something more than mere adhérence. It may depend on whether there is what may be called frozen continuity between the ice and the rock.

In a former paper (*Geogr. J.* 100 (1942) 165) it was pointed out that in many cases of residual moutonnée rock-knolls, the rock itself was massive in structure with the main joints tending to be nearly vertical. Perhaps the most spectacular of such rock masses is Castle Crag near Grange, which is remarkable for its great size and also for its striking position right in the very jaws

of Borrowdale. One would have thought that if any rock mass courted reduction by glacial erosion it was this one. A recent visit to it was interesting because it gave an opportunity to see whether the ideas mentioned in this former paper were illustrated in this striking example. It may seem superfluous to describe such a well-known crag, but as some readers may not have examined it closely the following details are given.

The crag rises from the valley bottom at 300 feet up to a height of 900 feet, the slopes on all sides being steep and actually precipitous on the west. The rock is a magnificent solid slate and the quarries, right into the top of the crag, show on their faces the striking vertical jointing of the rock. This is evident in Plates 5 and 6; Plate 6 shows the summit where the prehistoric fort was placed and where the memorial tablet is now erected. The south slope of the rock is strongly montonnée and the polished surface can be seen truncating the successive vertical sections. South of the crag there are many hummocky moutonnée knolls where there has doubtless been much plucking and then grinding to a rounded finish. The crag certainly bears out in a remarkable manner the contention that these remainder moutonnée knolls depend largely on the arrangement of the jointing.

De Martonne gives a very interesting case of the Grindelwald glacier. "Les variations du glacier de Grindelwald en Suisse ont été utilisées par Baltzar de Quervain et Lütschy. La roche saine percée de trous a été recouverte par une poussée du glacier de 1918 à 1924 et le recul de la glace a permis de mesurer la diminution de profoundeur des trous, donnant une évaluation exacte de l'usure par frottement. Les nombres varient de 0 à 18 millimètres. L'observation montre que l'érosion peut être très faible en des points où la vitesse était relativement très forte."

Here again, as in the preceding section, there is a proof that greater speed does not necessarily mean greater erosion. At the same time it is obvious that without motion there can be no grinding. It may be that up to a certain limiting value, not necessarily the same in different circumstances, the erosion effected by grinding does increase with the velocity but that after that velocity is passed the erosion diminishes.

With erosion by plucking the same sort of consideration comes in. If any block, about to be plucked, has to be in frozen continuity with the ice when it is removed by the latter, and if the more rapid motion of the ice tends to make such continuity more difficult, then greater velocity may also tend to diminish the amount of erosion by plucking. Depth of ice will almost certainly increase the eroding power for grinding purposes, but it does not seem at all certain or even likely that it will increase the plucking. A greater depth of ice would retard the fluctuations of temperature at the sole of the ice and so tend to diminish the opportunities for renewed plucking at any particular piece of assailable rock.

It seems likely that attempts to arrive at laws governing glacial erosion stand a better chance of success by dividing the process into the two dissimilar processes of grinding and plucking and considering them separately. But in both cases it appears probable that greater speed does not necessarily mean greater erosion. One other consideration is brought home to the observer who contrasts one of the well-opened U-shaped valleys with a

neighbouring V-shape. If, as seems probable, this difference between the two depends on the relative speeds of the ice in these two portions of its course, what an immense period of time must have been needed to produce such a striking result.

Needle ice and stone stripes

The hard winter of 1941–42 afforded several occasions on which needle ice could be examined and, what is much more difficult, photographed with a certain measure of success. After several days of frost good crystals of needle ice were found pushed out from the clayey bank of the Grisedale Beck. The stream at this point passes through a rather boggy part of a field where the banks stand up 2 or 3 feet and are formed of fine alluvial matter. The growth of these needles takes place along the temperature gradient and at right angles to the surface. Consequently in this case the needles were pushed out nearly horizontally where the bank dropped down vertically to the water. The ice crystals grow in length by more water being frozen on at the earth-connected end of the needle. In this process particles of matter are caught up and incorporated in the ice, and the needle pushes still farther out. Then when a thaw comes the ice melts and the whole of the incorporated solid matter is thrown down; in this case simply dropped into the water and washed away. In Grisedale Beck a considerable foot of this clayey matter projected into the stream, that is, the upper part above the water had receded farther than the submerged part. From the amount of included matter in the ice and the deposit that was formed on the melting of the ice, it was clear that much of the erosion of the bank was due to the formation in frosty weather of this needle ice.

In the first place examined the crystals were 2^1_2 to 3 inches long with five or six major layers which are shown in the photographs. Each major layer often contained three subsidiary layers; all the different layers were probably the result of different intensifications or renewals of frost. Farther up the valley another place was found where even bigger needle growth occurred. Here the ground varied in texture, one part was clayey like the first, the other part was much coarser and even rubbly, containing stones up to some inches in length. The layers of needle ice were 4^1_2 inches thick and in one case even 6 inches, but they were not so regular as on the clay. Some of the needle ice was very dirty with included matter which contained quite big stones. Naturally when such a big stone occurred it interrupted the regularity of the ice layers.

Why the needles of ice on the clay were much cleaner but also considerably shorter than on the rubbly area was difficult to answer. One would have thought that where the particles of matter were small as in the clay, they would have been more easily picked up and incorporated in the ice. Possibly the explanation was that the rubbly layer was more porous than the other and the process of drawing up the water by capillarity proceeded more rapidly and thus the solid matter was more quickly and readily embedded in the ice. There would also be less adhesion of particle to particle in the coarse material.

Every exposed bank of unconsolidated matter is subject in frosty weather to this form of erosion. There is one 30-foot cliff of boulder clay in the bank

of Glenridding Beck which, under the morning sun succeeding a sharp night frost, discharges a fusillade of stones into the stream below. This action of needle ice in first pushing stones out of their beds and then releasing them must cause some of the trouble that climbers experience in mountain couloirs.

The Helvellyn Stone Stripes were visited towards the end of March when a short period of thaw had succeeded a long period of frost which had however not been continuous. The ground above 2600 feet or thereabouts was still frozen at a depth varying from 2 to 4 inches according to position and aspect. Whole tracts of the top gravelly soil were a mass of soupy sludge, so messy in places that it made walking difficult. As is always the case at any time closely following the frosty period, the fine stripes were standing noticeably higher than the coarse stripes. It is only later in the year, in summer and autumn, that the area regains its general even surface with the fine and coarse stripes at the same level. The ice layer was found about 3 inches below the fine stripes but it was not found below the coarse stripes. In one place this needle-ice layer had five layers with included fine matter. The coarse stripes had an appearance here and there as if they were damper than the fine stripes, as might well be the case if the coarse stripes were pervious and the fine ones sealed by ice.

In the *Journal* for January 1936 there was a short article on stone stripes by the writer. The observational work then described is correct, but the tentative explanation omits some factors of importance. An account was given showing how the development of troughs or hollows took place in the upper surface of the coherent material lying beneath the top incoherent gravelly matter. By removing the latter carefully it was seen that from an almost imperceptible tiny hollow, first developing close below the edge of the disintegrating turf, the trough became larger until, farther down the slope, when the stripes were first noticeable on the surface, this hollow had become one of a regular series descending the main slope and properly spaced out with regard to its fellows. Plates 9 and 10 illustrate this process. It will be seen that two incipient troughs die out and are renewed lower down, then one of these incipient troughs is suppressed, and finally the surviving channels form the lines in which three regularly spaced stripes of coarse stones occur. Cases have been observed, both on Robinson and Helvellyn, where a sort of stone striping was being developed merely by the canalizing action of remainder knobs of vegetation at the top of a bare gravelly area. It is quite certain that these troughs filled by coarse stripes help to form a stable method of surface drainage. This meets the difficulty that an arborescent branching system of drainage is not possible on a surface where the whole mobile cover is moving bodily, though slowly, down the main slope. This suppression of a normal branching method of drainage may be one additional factor in the preservation of the summit roundness of some of our fells.

The tentative and irregular beginning of these slight hollows was examined in other places and the course of development was found to be the same. On another occasion a section across two fine stripes and the intervening coarse stripe was made deep enough to get through and below the layer of needle ice which was found 3 inches below the surface of the fine stripes. The figure shows the arrangement of this ice which met the unfrozen ground in a straight

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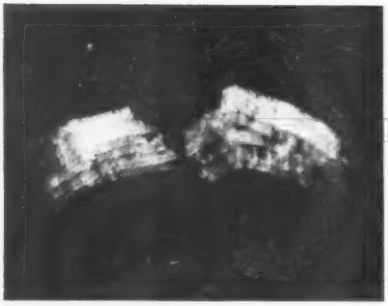
tabl

5. Quarry at top of Castle Crag, note vertical jointing

6. Top of Castle Crag showing platform of prehistoric fort and Memorial tablet on moutonnée rock

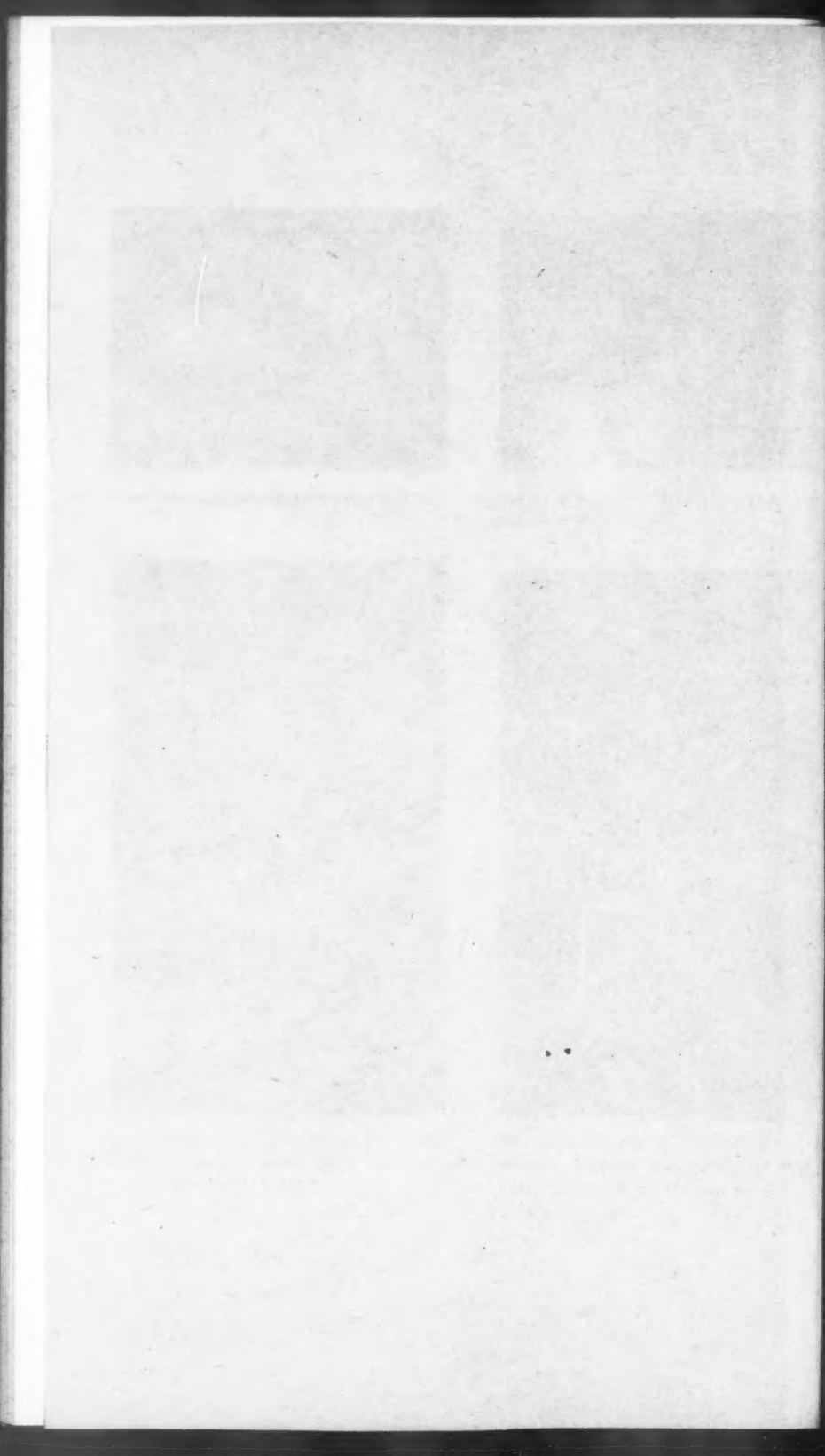


7. Needle ice showing six layers

8. Needle ice, earth base to right. Kn measures five inches

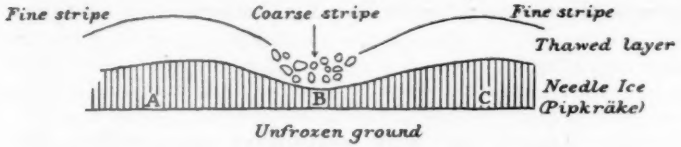
9. Development of channels for stone stripes. Looking down slope; channels marked with white tape

10. Development of channels for st stripes. Looking up slope; loose surf material removed



line and not in an undulating line corresponding to the undulating lines of the top surface or the upper surface of the ice layer.

Most writers on stone stripes and kindred phenomena lay great stress on the horizontal pressure created by the freezing, thus accounting for the edgewise position of the stones in the coarse stripes. This vertical position of the stones is not a specially noticeable factor in these stripes of the Helvellyn



Ice at A and C firmer and stronger than at B

area. It does occur, but not always. It must be remembered that a great deal of frost-heaving occurs in each fine stripe and a certain amount in the coarse stripes when the frost penetrates deeply. But all the ice formed is of the needle type with the crystals rising perpendicular to the surface and not oriented horizontally, so that if and when horizontal pressure is created it must be by the clustering thickly together of a greater number of these nearly vertical needle-ice crystals until they form a dense mass of solid ice. No such very strenuous horizontal pressure is needed because as soon as the troughs have developed, their closeness together and the frost heaving would ensure the collection into them of the bigger stones.

The elaboration of the stone stripes seems therefore to depend on the following processes:

The continuous upward sorting of the larger stones through the frost action at work upon the cover of loose material.

The frost heaving taking place more effectually when there is a collection of fine material kept in a damp condition, any such collection tending to increase through further frost action.

The creation of small irregularities in the top of the coherent material owing to these heaving processes.

The slow motion down the main slope of the whole cover of loose material owing to the movements given by the formation of needle ice layers and their subsequent melting. This downward motion prevents the formation of a branching system of drainage.

The utilization of incipient hollows for the purpose of downhill run-off and thus the reinforcement of suitably placed hollows for this drainage. Concurrently with this, the suppression of hollows which are not necessary to an unbranching downhill run-off. With a more or less uniform slope, and a more or less uniformly developed mobile cover, a regularly spaced arrangement of these troughs becomes necessary. The spacing will depend on the size of the material, the degree of slope, and the amount of rainfall.

The collection of the larger stones in the hollows owing to the frost heaving which elevates the fine stripes much more than it does the intervening troughs.

After the suppression of unnecessary hollows and the development of of the survivors into a regular system the arrangement of coarse and fine stripes becomes visible and only then.

Sincere acknowledgments are made for help derived from Hogbŏm's 'Über die geologische Bedeutung des Frostes,' Huxley and Odell's "Notes on surface markings in Spitzbergen," *Geogr. J.*, March 1924, and S. Taber's papers on "Frost heaving," in the *Journal of Geology* for 1929 and 1930.

THE NAMES OF THE PHYSICAL FEATURES OF BRITAIN

E. C. WILLATTS

THE Ministry of Town and Country Planning is preparing, in conjunction with the Ordnance Survey, a series of maps for use in planning which will show the movement and density of population, and the physical and economic resources of the country. They are being published by the Ordnance Survey as coloured overprints on the scale of 1 : 625,000 (about 10 miles to 1 inch). On each map is being printed the new National Metric Grid, recommended by the Davidson Committee. The series would not be complete without a physical map, and a new one is in preparation to meet this need. It shows contours at 50, 100, 200, 300, 400, 500, 600, and 700 metres, with layer tints changing at each 100 metres. The rivers and lakes and their names are to be shown in blue, but otherwise the map is to be purely a physical one and to have no detail or names of man-made features such as towns and routes, which constitute the under-print to the other maps in the series. It seems that there has been no previous purely physical map of the country on this scale, showing the names of our chief natural features, and the preparation of the present map therefore provides an excellent opportunity for careful consideration of what names should be included. The subject was reviewed rather more than forty years ago, by the Society, when "A Sub-Committee of the Research Committee, consisting of Mr. G. G. Chisholm, Mr. H. J. Mackinder, and Dr. H. R. Mill, was appointed to suggest a nomenclature for the larger features of the relief of England and Wales, especially for their whole extent." [1] The work was confined to England and Wales and to a map on nearly one-third of the scale of that now in preparation, so that it was unfortunately not possible to consider many of the important but lesser features. An opportunity now arises to canonize those names which are commonly accepted as proper to all features of sufficient importance to merit inclusion, and perhaps to introduce acceptable names for the few areas where no name has been commonly applied.

It is a great drawback to informed discussion of any type about our country

[1] Hugh Robert Mill, "England and Wales viewed geographically," *Geogr. J.* 24 (1904) 621–36.

if there is not a very close measure of agreement about the naming of its chief features, both as regards the correctness of any name and the exact area to which it shall apply. It would be confusing, for example, if there were no agreement as to the precise extent to which the name North Downs applied. Some maps show the feature as starting just south of Newbury. It is suggested that the Hogs Back is the most westerly feature which could be embraced by the name.

It is axiomatic that the scale and design of the map set a limit to the features which can be named, and on a map planned, as this is, to bring out the principal features of the whole country, it is undesirable to include those of purely local importance. It is desirable, in the interests of clarity, not to have too many names. Absolute size cannot however be taken as a decisive criterion, relative importance must be considered. Thus the Hogs Back is one of the smallest features claiming inclusion, but a feature of this magnitude occurring in the Welsh or Scottish mountains would not be named.

There are several different types of name. The main upland masses of the country deserve their appropriate titles, but the case for including all vales and lowlands is less clearly made out. Although on grounds of importance to human geography the vales merit inclusion, the necessary nomenclature is often lacking. Then there are the peaks or summits of hill masses. Few would doubt the value of including a number of them; the difficulty is to make a selection. Lastly, if we leave aside the names of hydrographic and coastal features, there are names such as Sherwood Forest, the Vale of Glamorgan, Wirral, and Galloway, which are rather regional than strictly relief names. Yet many of them are applied, as in the cases of the Forest of Dean and the Isle of Purbeck, to relief features, and these and others are too well known and hallowed in use to be lightly rejected.

On Ordnance Survey maps there seems to be a division of all such physical names into two broad classes: those which apply to features sufficiently conscribed in extent to fall on the largest scale maps, and those applying to much larger features. It is well known that the Ordnance Survey make very careful reference to local owners and authorities before including names on their large-scale maps, and from these plans the smaller scale maps are compiled. There appears however to be no corresponding opportunity for checking the names of extensive tracts of land; for example in the open chalklands of England most parishes have their stretch of down, *e.g.* Lambourn Down, and such names appear faithfully on the 25-inch, 6-inch, and, where space permits, on the 1-inch maps. But there is no final authority for using the comprehensive name Berkshire Downs on smaller scale maps for the whole stretch of country, although tradition and common sense demand the name.

Probably because our forebears were more concerned with the names of local rather than of extensive features, it is only relatively recently that most of the larger names have begun to appear. Thus Rocque's map of Berkshire (1761) gives names very similar to those used by the Ordnance Survey to-day; every chalk parish has its Down, but the only extra-parochial or regional names to appear are Forest of Windsor and Vale of White Horse. But on a small-scale map to-day it is very important that geographers and all who use maps should be able to find names which are of widespread and standard

application. It seems astonishing that such a name as Southern Uplands has never been used on Ordnance maps, nor any alternative name for the whole of the higher ground of Southern Scotland. At the same time such names ought to be those which are acceptable to geographers and not in conflict with modern concepts of physical geography. Thus, the name Pennine Chain, while widely used, is not consonant with the physical structure of the feature described in older text-books as "the spinal ridge of England," and Pennine Uplands would be more reasonable.

Geographers have been guilty of inventing some quite unsuitable names for certain physical features. An example is East Anglian Heights, or East Anglian Ridge for the north-eastward extension of the chalk upland between Stevenage and Bury St. Edmunds. Very little of the area strictly falls within East Anglia and Sir Halford Mackinder has suggested the name Icknield Downs for this stretch of country. Lincoln Edge is another example of a geographer's label. The edge itself is locally known as The Cliff and the upland as The Heath. Some of the names which it is suggested should be disused, and those which might with advantage replace them, are:

Cumbrian Mountains	Lake District
Pennine Chain	Pennine Uplands
East Anglian Heights	Icknield Downs
Lincoln Edge	Lincoln Cliff and Heath
Forest Fawr	Brecon Beacons
Western Highlands (Scotland) ..	North Western Highlands

A number of areas have always been known by the names of Forests or Chases which existed in former times over the whole or part of them. Such names however are often strictly applicable only to circumscribed tracts used for hunting, and it seems reasonable to extend and indeed practice has virtually legitimized the extension of such names to wider tracts. Thus it would be a bold geographer who would refuse to apply the name Exmoor to a much wider tract of the high moor-capped upland than the old royal forest in the Somerset parish of Exmoor.

It is an important question whether, for the sake of convenience and reference, suitable names should not be found for certain definite tracts of country which have not hitherto enjoyed a name, such as the stretch of land between the river Ouzel and the edge of the Fens. The south-west extension of the Pennines, the area of the South Wales Coalfield between the Vale of Glamorgan and the Brecon Beacons, and the upland on the borders of Ayrshire and Renfrew, whose summit is known as the Hill of Stake, are other and perhaps more deserving examples. It would be necessary to find a name for each in harmony with the genius of the area.

The names of peaks or summits present difficult problems. The clarity of the map requires that there shall be a strict limit, but relative height can be taken as a deciding factor. Grounds for insertion include significance as landmarks of more than local importance, fame in literature, and as affording viewpoints or otherwise attracting climbers.

Vales and lowlands, as the more negative aspects of relief, in most physical maps take their titles, if any, from the principal river by which they are

drained, *e.g.* Thames Valley, Kennet Valley. There are some however which are well known by other names than those of their rivers, such as Wensleydale, Vale of Powis, Vale of Taunton, and others. Lowlands other than vales also present their problems. Except where there is a high degree of regional consciousness in a lowland, which has helped to keep in use a distinct name for the area, it seems pointless to detract from the clarity of the map by adding names which may be mere geographers' labels. Thus The Eastern Plain of England is hardly to be considered, but The Fens must go in.

There are some other names which are not really physical names, but which have by long and proper usage been applied to definite areas often having some physical unity, and it seems reasonable to include them. Examples are Gwent and Lleyn in Wales, Craven, Furness, and Holderness in England, and The Merse, Kyle, and Caithness in Scotland.

This note is being published in the hope that geographers and all who are interested in the problem here outlined will put forward their suggestions on the subject so that the matter can be discussed and a consensus of the best opinions submitted to the Ordnance Survey. It has unfortunately not been found possible to publish a map to accompany this note, but a list of suggested names is given in the hope that it will provoke constructive criticism. Correspondence on the subject should be addressed, not to the Society, but to Dr. E. C. Willatts, Maps Officer, Ministry of Town and Country Planning, St. James's Square, S.W.1, from whom an outline map showing the proposed positioning of the suggested names may be obtained.

NAMES IN ENGLAND AND WALES

Ranges and hills

Blackdown Hills
Brendon Hills
Quantock Hills
Polden Hills
Mendip Hills
North Dorset Downs
South Dorset Downs
Cranbourne Chase
Hogs Back
North Downs
South Downs
Portsdown
Battle Ridge
Ragstone Ridge
Forest Ridges

Chiltern Hills
Icknield Downs
Norfolk Edge
Cromer Ridge
Northampton Uplands
Edge Hill
Cotswolds
Malvern Hills
Mynydd Presceli
Mynydd Bach
Long Mountain
Black Mountain
Plynlymmon
Caradoc Hills
Wenlock Edge
Berwyn

Clwydian Hills
Clent Hills
Lickey Hills
Axe Edge
Congleton Edge
Pennine Uplands
Hambledon Hills
Howardian Hills
Yorkshire Wolds
Lincoln Heath
Lincoln Cliff
Cross Fell Edge
Cleveland Hills
Cheviot Hills
Lincolnshire Wolds

Peaks and summits

Brown Willy
Yes Tor
Dunkery Beacon
Hindhead
Leith Hill

Blackdown
Cleeve Hill
Bredon Hill
Sugar Loaf
Brown Clee

Titterstone Clee
The Wrekin
Breiddin
Cader Idris
Yr Eifl

Peaks and summits

Moel Hebog
Moel Siabod
Snowdon
Glyder Fawr
Carnedd Dafydd
Carnedd Llewelyn
Parys Mountain
Aran Fawddwy
Moel Fammau
Kinderscout
Pendle Hill
Pen y Ghent
Ingleborough
Whernside
Great Whernside
Snaefell
North Barrule
South Barrule
Skiddaw
Helvellyn
Sca Fell
Cross Fell
Cold Fell
Tosson
The Cheviot

Moorlands and uplands

Hensbarrow Downs
Bodmin Moor
Dartmoor
Exmoor
Salisbury Plain
Marlborough Downs
Berkshire Downs
Black Mountains
Brecon Beacons
Hampshire Downs
Mynydd Epynt
Longmynd
Arenig Fawr
Rhinog Fawr
Mynydd Hiraethog
Cannock Chase
Rossendale Fells
Bowland Fells
Furness Fells
Shap Fells
North York Moors
Rombalds Moor
Bell Crags
Bewcastle Fells

Valleys and dales

Vale of Taunton
Blackmore Vale
Vale of Wardour
Vale of Melksham
Vale of Pewsey
Vale of White Horse
Vale of Sussex
Vale of Kent
Holmesdale
Vale of St. Albans
Vale of Aylesbury
Vale of Baldock
Vale of Belvoir
Vale of Berkeley
Vale of Gloucester
Vale of Evesham
Vale of Glamorgan
Vale of Powis
Wensleydale
Vale of York
Vale of Pickering
Vale of Eden
Liddisdale

Lowlands

Somerset Levels
Romney Marsh
Pevensey Levels
The Fens
The Marsh
Chat Moss
Lincolnshire Marsh
Norfolk Broads
Sussex Levels

Forests

New Forest
Forest of Dean
Radnor Forest
Clun Forest
Charnwood Forest
Sherwood Forest
Delamere Forest
Inglewood Forest
Rothbury Forest

Regions

The Weald
Breckland
Sandlings
Gower
Gwent
Lleyn
Snowdonia
Peak District
Wirral
Fylde
Craven
Furness
Holderness
Stainmoor
Cleveland
Lake District
Isle of Thanet
Isle of Sheppey
Isle of Purbeck
Isle of Axholme
Isle of Ely

NAMES IN SCOTLAND

Ranges and hills

Eildon Hills
Lowther Hills
Pentland Hills
Lammermuir Hills
Moorfoot Hills
Kilpatrick Hills
Campsie Fells
Kilsyth Hills
Cleish Hills
Lomond Hills
Ochil Hills
Sidlaw Hills
Garvock Hills
Correen Hills
Cromdale Hills
Ladder Hills
Cairngorm Mountains
Monadhliath
Cuillin Hills
Red Hills
Southern Uplands
Grampian Highlands
North Western Highlands

Peaks and summits

Dun Rig
Dollar Law
Broad Law
White Coomb
Hart Fell
Ettrick Pen
Criffell
Culter Fell
Cairnsmore of Fleet
Cairnsmore of Carsphairn
Merrick
Hill of Stake
Ben Cleuch
Tinto Hills
Scald Law
Arthurs Seat
Ben Lomond
Ben Venue
Ben Ledi
Ben Vorlich
Ben Chonzie
Goat Fell
Paps of Jura
Ben More (Perthshire)
Beinn Dorain
Ben Cruachan
Ben Ladigh
Ben Lawers
Carn Mairg
Schichallion
Glas Maol
Lochnagar
Mount Keen
Mount Battock
Hill of Wirren
Hill of Fare
Bennachie
The Buck
Morven
Ben Rinnes
Cairn Gorm
Ben Macdhui
Creagh Meagaidh
Ben More (Mull)
Askival
An Sgurr
Blaven
The Storr
Beinn Mhor
Eaval
Clisham
Ben Barvas
Rois Bheinn
Sgurr na Ciche
Mamsoul
Sgurr na Lapaich
Mealfuarvonie
Liathach
Ben Eighe
Slioch
Ben Wyvis
Beinn Tarsuinn
Ben Horn
Beinn Dearg
An Teallach
Ben More Coriach
Suilven
Ben More Assynt
Quinag
Arkle
Foinaven
Ben Hope
Ben Loyal
Ben Klibreck
Ben Griam More
Beinn Dhorain
Scaraben
Ward Hill (Orkney)
Ronas Hill (Shetland)
Ben Nevis
Bidean nam Bian

Moorlands and uplands

Minchmoor
The Moors (Wigtownshire)
Rhinns of Kells
Rhinns of Islay

Valleys, straths, dales, and lowlands

Teviotdale
Esdale
Annandale
Nithsdale
Clydesdale
Carse of Stirling
Howe of Fife
Carse of Gowrie
Strathmore
Howe of the Mearns
Lauderdale
Glen Shee

Valleys, straths, dales, and lowlands

Glen Clova	Strath Findhorn	Glen Strathfarrar
Glen Esk	Strath Nairn	Glen Orrin
Glenkens	Strath Errick	Strath Conon
Strath Earn	Glen More of Albyn	Strath Bran
Strath Tummel	Glen Garry	Strath Oykell
Strath Isla	Glen Moriston	Strath Naver
Strath Bogie	Glen Urquhart	Strath Halladale
Strathdon	Glen Affric	Strath of Kildonan
Strath Spey	Glen Cannich	

Forests

Ettrick Forest	Mamore Forest	Applecross Forest
		Reay Forest

Regions

Lothians	Knapdale	Vaternish
Tweedside	Kintyre	Durinish
The Merse	Benderloch	Ness
Galloway	Drumalbin	Morven
The Machars	Atholl	Kingairloch
The Rinns	Rannoch Muir	Ardgour
Carrick	Lochaber	Moidart
Kyle	Badenoch	Knoydart
Cunningham	Breadalbane	Ardnamurchan
East Neuk	Mounth	Morar
Stormont	Deeside	Kintail
Cowal	Garioch	Black Isle
Argyll	Buchan	The Aird
Lorne	Trotternish	Caithness

ANKARA–ÇUBUK DAM

T. A. L. PATON AND C. S. BARTON

WHEN Kemâl Atatürk decided to move the capital of Turkey to the ancient and more central site of Ankara, he planned to make it a perfect example of modern city planning. How far he was successful is at once apparent to the visitor, who is struck by the orderly layout and by the imposing array of magnificent new buildings, government, municipal, and private.

Boghaz-Keui, a few miles away, the capital of the ancient Hittite Kingdom, was renowned for its magnificence, the remains of which still fill one with a feeling of awe and wonder. The spirit of this past greatness seems to have entered in some mysterious way the planners of the modern city. For it must always be remembered that, though the help and advice of foreign engineers, architects, and technicians was sought in the carrying out of the details, yet the plan and the conception were Turkish. The new Ankara is in complete

Çubuk reservoir

Çubuk, showing top of dam

Çubuk dam

Çubuk, showing spillway and tailrace below dam and garden

contrast to the old city, but it is a new city added on to the old one. The new city is a centre of the new civilization as Turkey has envisaged it, as Boghaz-Keui was the centre of the first great civilization of Turkey, the Hittite.

Ankara is a purely Turkish conception, the whole idea was Turkish. It is essentially Turkish, too, in that it has been built entirely from the resources of Turkey itself, no foreign capital or materials having been asked for or used in its creation.

Water for Ankara originally came partly by conduit from Elmadağ, $18\frac{1}{2}$ miles away, and partly from an underground water barrage. The amount obtained from these two sources was, however, not sufficient for the increasing population of the new city, and it became necessary to arrange for a supplementary supply. This was achieved by impounding the waters of the Çubuk river by means of the dam shown in the photographs, built across a gorge some 5 miles north-east of the city. The dam is beautiful work in full keeping with the high standard already set in the city itself. The total height is 150 feet, the width 660 feet, and the cost was £T.3,500,000. The reservoir holds 17,500,000 cubic yards of water, which is conveyed by pipe lines to a filtering and chlorinating station in Ankara, built at a cost of £T.1,000,000.

Attention has been paid to the aesthetic side of planning, in the careful layout of gardens and pleasure grounds on the open spaces around the works, the treatment of the exposed banks of the reservoir, and the afforestation of the lower slopes of the mountains.

The photographs were taken in June 1937.

AN EARLY COLLECTION OF ARCTIC PLANTS BELONGING TO THE SOCIETY

NICHOLAS POLUNIN

THE Society is very fortunate in possessing a small collection of arctic plants described in the R.G.S. Museum Catalogue, p. 28, as "Arctic Flowers collected on Capt. Parry's expedition by Lieut. Richards in June and July, 1823. Presented by Mr. J. Foster Stackhouse, 1910," and consisting of seventeen specimens in a home-made green folder of stiff paper. Each specimen has been pressed and dried in the usual manner and finally mounted on a small sheet of rather thin paper about 18·5 cm. long and 11·5 cm. wide, the paper being apparently all from one source and watermarked 1822. The folder is stamped on the outside "MAP ROOM 23 APR 1910" and encloses also an eighteenth sheet of paper similar to the others on which is written in an apparently near-contemporary hand "Arctic Flowers—Latitude 69°. 20′. 40″ N. Longitude 83. 10. 00 W. June & July 1823. Collected on Captn. Parry's expedition by Lieut. Richards."

The specimens are well mounted and in excellent preservation. In spite of their antiquity this is not remarkable; if properly prepared and kept dry and

unmolested by insects such specimens are practically permanent; I have in my care at Oxford many plants collected as early as the beginning of the seventeenth century which from their appearance might almost have been gathered last summer. Even colour is often quite well preserved.

As I have indicated in several recent communications,[1] there are preserved in various institutions a number of these small sets of *exsiccatae* from Sir W. E. Parry's expeditions "for the discovery of a North-West Passage from the Atlantic to the Pacific." Only when data have been affixed contemporaneously or nearly so to the individual sheets does it seem safe to found on them new records, from a particular place, of the species concerned; for experience has shown that the general notes written on separate sheets accompanying such collections are not always reliable. This principle must be applied to the present set, even if the label probably refers to every one of the specimens; for the specimens individually lack any notes as to locality, date, or collector, Even the attempted identifications pencilled (apparently at a much later date) on the majority of the sheets are so rarely in accordance with present-day views that I have found it necessary to attach revision slips to all but two of the sheets.

The label quoted above indicates collection during Parry's 'second' voyage (1821–23). With regard to the probable collector, Lieut. Richards, it is to be presumed that he was the Charles Richards mentioned in the introduction to Parry's 'Journal of a Second Voyage' London, 1824, as one of the four midshipmen on board the *Hecla*, which was one of Parry's two ships "of precisely the same class" undergoing the voyage; it was after this man that Parry named (*op. cit.*, p. 310) the most north-easterly bay in Melville Peninsula, and it was during the same journey with him in 1822 that Parry discovered and named "by anticipation" (*op. cit.*, p. 312) Fury and Hecla Strait. However, as this particular Charles Richards (the first of that name mentioned by C. R. Markham: 'The Arctic Navy List,' 1875) was still only a midshipman in the same ship for Parry's 'third' voyage (see Parry's 'Journal of a Third Voyage,' London, 1826), it seems likely that the label was written some years after the plants were collected; in any case it cannot be relied upon as necessarily correct in all details, the watermark alone indicating that it was written after the return of the expedition which left England in 1821 and remained without "trace of civilized man . . . for the space of seven and twenty months" (Parry, 'Journ. Second Voy.' p. 486).

The point indicated by the latitude and longitude data on the label lies on Melville Peninsula a few miles south of Quilliam Creek, which was much visited, by parties from both ships, during the summer of 1823 (see Parry, *op. cit.*, pp. 434 *et seq.*). However, in view of the practical impossibility of confirming these indications as to the place, etc., of collection of each specimen it is gratifying to note that all except one of the plants contained in the present set are well known to occur on the mainland of Melville Peninsula (see 'Botany of the Canadian Eastern Arctic, Part I'), the one exception being known from three widely separated islands off the coast.

[1] 'Botany of the Canadian Eastern Arctic, Part I, Pteridophyta and Spermatophyta,' Ottawa, 1940: *Proc. Bristol Nat. Soc.*, Fourth Ser., IX, Part 3, 1942; *North Western Naturalist*, XVII, 3, 1942; *Journ. Botany*, LXXX, 1942.

As for the plants themselves, the seventeen sheets bear representatives of sixteen different species, all of which are familiar arctic ones of wide distribution, the majority being circumpolar. Apart from the grass *Alopecurus alpinus* Sm., which is only approaching anthesis, all are dicotyledons in the flowering condition and of that attractive type of flower which visitors to the Arctic are wont to bring home while frequently ignoring the more obscure but often scientifically more interesting species. The specimens could all, I think, have been gathered at much the same time and without walking very far, as no great range of season or habitat is indicated. Even if one of the plants is calcicolous and others tend rather towards oxyphily it is notable that the probable place of collection mentioned above lies at or near the junction of limestone with acid-weathering rocks.

Among the species represented in the collection the following six occur in the British Isles, though sometimes in a different form: *Cerastium alpinum* L., s.l., *Saxifraga cernua* L., *S. caespitosa* L., *S. hirculus* L., *S. oppositifolia* L., and the *Alopecurus*. Of the remainder in the collection only two, *Lesquerella arctica* (Wormskj.) S. Wats. and *Saxifraga tricuspidata* Rottb., appear to be confined to the New World, though both are found in Greenland. Although various considerations make it seem highly improbable that Sir W. J. Hooker consulted the present collection when preparing his "Botanical Appendix" to Parry's account of the voyage (pp. 381–430 of the 'Appendix to Captain Parry's Journal,' London, 1825), all the species represented in this collection are reported by Hooker from Melville Peninsula or the adjacent islands, though frequently under names other than those employed nowadays. Moreover, although this region was first explored during the voyage and has been comparatively little visited since, all except two of these species are now known to be plentiful and widely distributed in it; the two exceptions are *Ranunculus sulphureus* Solander apud Phipps and the *Lesquerella*, the former being known in the region so far only from Igloolik and Barrow river and the latter from Igloolik, Winter Island, and Danish Island.

A NEW CHART OF THE ANTARCTIC

ANTARCTICA: Compiled from all available sources to 1943, including the results of all American Expeditions from the United States Exploring Expedition 1839–41 to the United States Antarctic Service 1940–41. No. 2562. Hydrographic Office, Washington, D.C., March 1943. Latitudinal scale 1/11,250,000. 47 × 30 *inches*. 80 *cents*

WE have to thank the Hydrographer of the United States Navy for two copies of this important chart, printed in six colours. Its title arouses high expectations, for we had heard that the United States Antarctic Service had been closed down for the duration of the war, and feared that we should have to wait long for the results of the surveys by land and air summarized in the *Journal* for August 1941 from the preliminary account of the expedition published by English (7) in the *Geographical Review* for July 1941 on the basis of the radio reports sent during its progress.

Two important new coasts are shown upon the chart, from 70° to 140° W.,

the westerly bend of the southern end of King George VI Sound to the beginning of the Ruppert Coast; and a great extension of the Weddell Sea coast along the meridian 60° W., from 70° to about 77½° S. The first was mapped by the U.S. Antarctic Service as far west as 76° 42′ by a shore party; thence a sea-plane from the *Bear* carried it to about 114°; and then after a gap of a few degrees it was sketched by planes from Little America. All this very nearly covered the one large sector of the Antarctic Coast that had remained unknown, and is a substantial addition to the map. But one may suggest that a coast seen only from the air with no ground control is better shown by a pecked line than by a solid. How uncertain air reconnaissance without ground control may be is shown by an inscription on the Canberra map (3) in 73° S. 101° W. 'Wilkins (plane) 1930: no land seen,' which is some 70 miles inside the mountainous Walgreen Coast surveyed by plane from the *Bear*.

The most interesting part of the chart is the eastern coast of Graham Land south of 65°, first sketched from the air by Wilkins (1); then photographed by Ellsworth and worked up by Joerg (2); then approached by the ground surveys of Rymill (Stephenson (5)). It is unfortunate that H.O. Chart 5411, (4) though prepared in 1939 especially for the use of the U.S. Antarctic Expedition "from all available authorities," should have overlooked Joerg's Map A, which places Cape Keeler in 68° 44′, and that it should have given that name to the unnamed cape fixed by Rymill in 69° 38′ S. It is still more unfortunate that, ignoring Joerg's finding (2) that all Wilkins' positions here are about 50 minutes of arc too far south, it should have shown Cape Eielson in 70° 4′ as a narrow promontory facing north (whereas Wilkins shows it as a broad corner facing northwest), and should have left a broad Stefansson Inlet with its mouth in about the same latitude. The inevitable result was that when the Weddell Coast Party of the United States Expedition, having surveyed the Bowman Coast, sledged southward over the coastal piedmont to 71° 51′ S., they passed 70° 4′ without finding these features and fixed at last in 70° 30′ S. "the cape interpreted as Cape Eielson" on H.O. 5411, though it looked eastward, and placed the name Eielson some 20 minutes of latitude south of where Wilkins placed it instead of a good deal north, where if anywhere it must be. And they named a neighbouring glacier Stefansson Inlet for the same reason. It is certain that Wilkins' Cape Eielson and Stefansson Inlet are not where the new chart places them. Joerg had proved it, and our Diagram (6) confirmed his showing.

But the new chart shows a large island off the coast of Graham Land lying between 69° 2′ and 69° 45′, in longitude 63° W., to which the name Wilkins has been assigned; it has never been shown before and one may wonder how Rymill missed it. It seems that he did not altogether, though Stephenson (5) does not show it. In his paper "British Graham Land Expedition 1934–37" Rymill writes (*Geogr. Jour.* 1938, 430), "For the thirty days that we were in sight of the east coast there was always low cloud out to the east, and only on two or three days was there enough west wind to blow it back from the land, letting us see the actual shelf-ice. On one of these days it cleared enough for us to see what we took to be low islands lying a few miles off the mainland which was clearly marked by a steep ice-cliff." These may probably have been the southern end of the large island.

The Weddell Coast party must have made ample ground control, and there was a flight down the coast, whose photographs, tied to that control, may finally place beyond doubt the photographs of Wilkins and Ellsworth and complete on a sufficient scale the intricate topography of the coast from Lurabee Glacier to Cape Keeler. The whole area so beautifully drawn in Joerg Map A (about 13 inches square) occupies less than a square inch on the new chart;

there is no room for most of the familiar names and detail, and no light is thrown on the difficult question of Casey Channel and where Ellsworth was circling in what he thought was Stefansson Strait. For all this we must wait.

Meanwhile it is tempting to suggest that the north-west corner of Wilkins Island may be the elusive Cape Eielson. Its latitude on the new chart is 69° 15′, which is close to the 70° 4′ of H.O. 5411 moved 50 minutes north, with Cape Keeler and the rest of the Wilkins-Ellsworth detail, according to Joerg (2). And in that case Wilkins' Stefansson Strait would coincide with Rymill's great east–west depression, north of his own track, in about 69° 30′. The distant shoreline seen by Rymill would be the northern side of the Lurabee Glacier as already shown in the Diagram (6). Wilkins' photographs P and Q can, as in Diagram p. 180, be located north of Rymill's cape, and the "Stefansson Strait" in the foreground of each is nothing but the Weddell Sea, while Wilkins' photo-

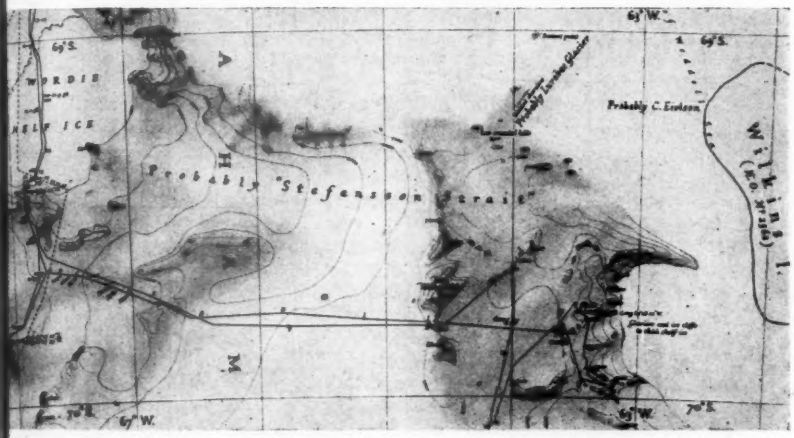


Fig. 1. Portion of Stevenson's map (5) *with additions*

graph R, which neither Joerg nor Diagram had attempted to place, can now be placed with respect to P and Q as Wilkins did, looking north-east towards our new Cape Eielson.

The Canberra map has brief historical notes and was published with a substantial volume of documentation. The new chart has a reference to Sailing Directions for Antarctica, H.O. 138, not yet received in England, but the chart has no indications of discoverer or date. The most striking difference between the Canberra map and the Washington chart is that the former shows very carefully and distinctly the several territorial claims to Antarctic lands and that the latter shows none. While the Department of State recognizes none, individual citizens of the United States have made such claims, and it is worth noting that the names associated with those claims have now been placed, and in some cases extended, upon a chart published by Authority of the Secretary of the Navy.

The long extent of coast which Wilkes explored in the early months of 1840 was shown on his chart as the Antarctic Continent, and it was long before his own name was attached by his own country to any part of it. In an article

"Wilkes Land rediscovered" (*Geogr. Rev.* Oct. 1932) Professor Hobbs finds that it was soon named Wilkes Land in German atlases, but that American atlases "made no use of it, at least through the forties, fifties, and much of the sixties of the nineteenth century," and gives no reference to any American use of the name before 1905. In a most useful chart Hobbs has reproduced Wilkes' original, and overprinted in red the routes and surveys of recent explorers, especially Mawson. It shows that Wilkes was more than 200 miles from land when he first believed he saw it on 16 January 1840, and about 150 miles away on the 19th when "land was now certainly visible from the *Vincennes*," and the *Peacock* farther in "tacked to the southeast to work up for an immense mass, which had every appearance of land, and which was believed to be such by all on board." Hobbs believes that this Cape Hudson of Wilkes was Mawson's Cape Freshfield, raised by mirage. However this may be, it seems hardly to

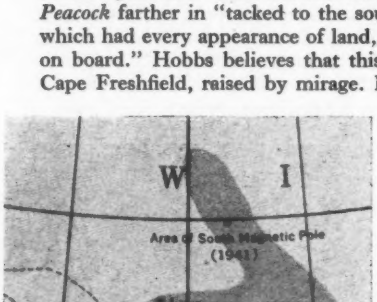


Fig. 2

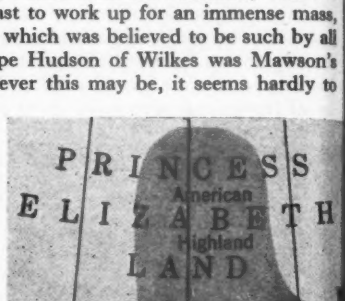


Fig. 3

justify the unceremonious treatment given by the new chart to Mawson's Cape Wild, Deakin Bay, and Cape Freshfield (Fig. 2).

Wilkes' first, and indeed only, close approach to land, was just west of 140°, where D'Urville had been only a few days before and called it Adélie Land. By decrees of 1924 and 1938 this was created a French Dependency with limits 136° to 142° of East longitude. The coast was surveyed by Mawson in 1912; the French have since proclaimed it a Nature Reserve. The most easterly land which Wilkes certainly saw was D'Urville's in 140°; the most westerly, Knox Coast in about 106°. The American Geographical Society's 'Map of the Antarctic' in four sheets (1908) marks Wilkes Land from about 102° to 137° "in a broad sense based on Wilkes' recognition of the existence of a continent" and the Canberra map of 1939 more precisely in 102° to 136°.

The new chart H.O. 2562 under review is not content with this. It enlarges Wilkes Land east and west with the capital W in 151°, and the final D in 102°; but by degrading the Lands of Kaiser Wilhelm II, Queen Mary, Adélie, King George V, and Oates to the level of Coasts gives a general effect of covering 90° to 160°, or 70° instead of 34°. One may think that this is an excessive claim

for the man who first divined the existence of, rather than actually discovered, much of this long uniform coast of the continent. The work and the wishes of others who have landed upon and surveyed the coast in later years need not be so much submerged.

A case of a different kind is in the representation of Princess Elizabeth Land (Fig. 3). Superimposed upon that name we read American Highland, and may well wonder what it is doing there. The Canberra map (enlarged inset) shows in 72° S. 79° E. a dot, inscribed 'Ellsworth (plane) 11.1.39,' it originates from an article by Ellsworth in the *National Geographic Magazine* for July 1939 with the text of a document he dropped at that point in a copper tube, carrying also a U.S. flag. The latter claimed "for my country, so far as this act allows, the area south of latitude 70° and to a distance of 150 miles east and 150 miles west of my line of flight, and to a distance of 150 miles south of latitude 72° longitude 79° E., which I claim to have explored." Hitherto a claim to the coast has implied a claim to the hinterland. In longitude 79° the latitude of the coast of Princess Elizabeth Land is about 68° 20′ and the 70th parallel is about 100 nautical miles inland. In effect therefore Ellsworth's claim to the hinterland of Princess Elizabeth Land (a new and unaccepted principle) is encouraged from the new chart.

On the opposite side of the continent is Graham Land, long called so by the British, and by the American Geographical Society so late as 1937, on Joerg's Map A (2). The Hydrographic Office chart 5411 of November 1939 called it Palmer Land down to 71° south; the new chart calls it Palmer Peninsula down to 73°. This name so placed needs some defending; there is no evidence that Palmer was ever farther south than 63° 45′ (see *Geogr. J.*, December 1940, and *Geogr. Rev.*, July 1941). When Ellsworth flew from Dundee Island to the Bay of Whales in 1935 he landed west of the 80th meridian and claimed all the land from the coast to the Pole between the 80th and the 120th for the United States; in several places he is explicit that the eastern limit of this claim is 80°. Nevertheless the new chart places the final D of the name James W. Ellsworth Land in 69°, south of King George VI Sound; the Canberra map has it in the place claimed by its discoverer. These are sufficient examples of a tendency to expand names beyond their proper limits.

The great interest and importance of the new discoveries made by the United States Antarctic Service, the particular problems of the "Stefansson Strait" region, and these difficult questions of names, have left little space for comment on the chart as a whole. It is on the polar equidistant projection; the quadrantal meridians are conveniently divided and figured in latitude, and it would have been convenient if there could have been some figuring of longitude around say the parallel of 80°; the graticule is printed in dark brown on a separate plate from the black outline. There must be several thousand soundings shown, with sea contours at each 500 fathoms; the sea is layer-coloured beyond the 100-fathom line in ten increasing tints of blue, of which the third has by some mischance of printing come out heavier than the fourth or fifth, on the body of the chart though not on the reference diagram. This has the unfortunate result of making the Indian-Antarctic and the Easter Island Swells appear as depressions rather than as elevations in the ocean bed.

A buff tint on the land shows that it has been seen, more or less, by at the least one person from the air. The heights of many peaks are given, but the representation of mountain ranges is unsatisfactory, and there is no indication that the Antarctic plateau rises to 10,000 feet above sea: not even a spot height at the South Pole. In general one may say that, as befits a Chart, it pays more attention to the sea than to the land, and it must be judged as a chart rather than a map.

A. R. H.

It is of course impossible to show more than a small fraction of all the deep-sea soundings that have been made, but those selected are well distributed and show that the gaps still unsounded in the Southern Ocean are nowhere very extensive, even in high latitudes. The terminology used by oceanographers for bathymetric features is a subject of some diversity of opinion. The terms used here are generally in accordance with those given by Sverdrup, Johnson, and Fleming ("The Oceans,' 1942), but it is doubtful whether the term "Seamount" for an isolated bank has received general recognition. "Trench" seems the appropriate term for the narrow trough off the South Sandwich Islands, but "Swell" is open to criticism as a translation of the German "Schwelle," and it may be suggested that "Rise" is a better word. The terminology is to some extent a matter of opinion, but it is unfortunate that better use was not made of all the data available for drawing the contours of the sea bottom: indeed, by no means all of the work shown on the Canberra chart, and given in the bibliography of the handbook published with that chart, is included. For example, Herdman's report on soundings (Discovery Reports, vol. VI) seems to have been overlooked, with the result that a number of features of the bottom topography in the Falklands sector are omitted or incorrectly contoured. The contours around South Georgia and towards the Shag Rocks do not agree with the *Discovery* soundings; two deep spots between the South Orkneys and Elephant Island are omitted; and the basin in Bransfield Strait is wrongly shaped. The South Sandwich Trench could have been more correctly drawn, for its southern end tapers to a much narrower cleft than is shown; and Thompson Island and the Chimnies (near Bouvet Island), though marked "E.D.", certainly do not exist at least in the position indicated. These points are not unimportant, even though the details of bottom contours in these regions are at best provisional and must inevitably be modified in the light of future soundings. N. A. M.

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REVIEWS

EUROPE

THE PLACE-NAMES OF CAMBRIDGESHIRE AND THE ISLE OF ELY.

By P. H. Reaney. (English Place-Name Society, Vol. XIX.) *Cambridge; Univ. Press*, 1943. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* lxii+396 *pages; maps.* 23*s* 6*d*

One of the most outstanding achievements in English scholarship during the inter-war period has been the work of the English Place-Name Society. Its first volume appeared in two parts in 1924–25, and this present volume, the nineteenth to appear, is of particular interest, because it was in an earlier account of 'The place-names of Cambridgeshire' that the late Professor Skeat, some forty years ago, laid down the great principle that must lie at the root of all place-name study. This principle was re-stated by the founder of the Society, Sir Allen Mawer, in his Robert Spence Watson Memorial Lecture at Newcastle upon Tyne in September 1922 (noticed in the *Journal*, 61, 463–4). Sir Allen then declared "that it is impossible to place any satisfactory interpretation upon the history of a name until we have traced it as far back as the records will allow, and that in many cases, unless the records go a good way back, speculations upon its meaning are worse than useless." There are many names among those of Cambridgeshire that illustrate this truth. Unfortunately this volume has to record the death of Sir Allen. To him, and to his colleague Professor F. M. Stenton, all historical geographers owe a great debt. Under their guidance, the study of place-names has passed from the stage of guess-work to that of an exact science whose conclusions are throwing light upon some of the darkest problems of early English history and geography.

The study of the forms of any particular name, fascinating though it may be, savours rather of a limited and local interest; but it is only upon the slow and laborious searching out of the early forms of each name that sound generalizations can be built. And some of the new generalizations of the Place-Name Society have been interesting enough to all historical geographers of England. Thus the study of Sussex place-names showed that the Weald was far from being a trackless waste in early English times. The volume on Devon, contrary to all expectation, showed that by far the greater part of names in that county were English, and not Celtic, in origin. The volume on Bedfordshire and Huntingdonshire provided no support to the theory of a British survival in the Fens; and now this volume on Cambridgeshire bears out the lack of evidence on this point. "The Celtic element in the place-names of the county is slight."

Despite the fact that the county is remarkable for its archaeological evidence from early Saxon times, there is no instance of the early suffix "ingas" among Cambridgeshire place-names. The existence of ancient Anglo-Saxon words and primitive forms however "fully agree with the indications of an early settlement provided by the archaeological materials." In general it seems that the earliest invaders entered the Fenland by the Wash, but, finding the area uninviting, they "pushed on up the rivers to more attractive country in Northamptonshire and Huntingdonshire and the upper Cam valley." One of the names left by these early settlers shows the necessity of assembling the earlier forms of present-day names; "Haslingfield" in its present form suggests "field of hazels," but its earlier forms show a derivation from the old personal name of "Hæsela."

The Scandinavian element in Cambridgeshire place-names is stronger than in Bedfordshire or Huntingdonshire, but even so it is not great. It is significant

that nowhere in Cambridgeshire is there a name ending in "-by" or "-thorpe." Six parish names only contain Scandinavian elements, and "all six are situated on the clay which was probably once well-wooded and not particularly attractive to early settlers." Unidentified field-names "abundantly recorded in medieval sources" however frequently contain Scandinavian elements throughout the southern half of the county. To the north, in the Isle of Ely, there is no Scandinavian parish name, but here too there is some Scandinavian influence in field and other names, particularly near the Lincolnshire border. Taken together, the evidence suggests not "the systematic division of the land among Viking settlers" as in many parts of the Danelaw proper, but "the naming of minor places in a more or less settled time and the gradual replacement of English terms by similar or corresponding Scandinavian ones, some of which became common even in districts where the settlement was not strong."

Anglo-Norman influence is not strong, and feudal and manorial names are not numerous, though Norman-French pronunciation has affected the forms of some names.

Of more interest to the geographer are those names that bear on the past topography of the region, and there is a marked contrast between the nomenclature of the southern upland and the northern Fenland. The names of the Isle of Ely reflect its fenny nature; names of "lost and decayed rivers and watercourses meet us at every turn." Fenland names moreover show a vocabulary peculiar to the district. "Many of the terms now used, such as *gole*, *gote*, *clote*, *galle*, have hitherto been noted only occasionally in counties such as Huntingdonshire, Northamptonshire, or the East Riding of Yorkshire, where fenland occurs," and there are many other unfamiliar topographical elements. Fenland products and occupations are "commemorated in numerous examples of Blockmoor Fen, Flag Fen, Fodder Fen, Frith Fen, *Lesh Fen*, *Lugfen*, Mow Fen, Reed Fen, Sedge Fen and Turf Fen." The drainage schemes of the seventeenth century and later have also contributed their share of personal and other names to the district, for many features have been named after various engineers and Commissioners of Sewers.

Another feature of interest to the historical geographer is the distribution of those names relating to the former distribution of woodland in the county. The wood names are disposed in three main groups, and show a general agreement with the distribution of wood as recorded in the Domesday Book. In the first place there is a group of suggestive names on the clay area in the south-east of the county along the Essex and Suffolk borders; here are forms ending in *leah*, (*ge*)*haeg*, *ryding*, *stocking*, and *holt*. Likewise there are many wood names in the western clay-lands adjoining Bedfordshire. One interesting feature of this district is "the use of *weald* for a stretch of high forest land on the clay from Croydon to Dry Drayton, extending across the border into Huntingdonshire;" examples are *Berstuneswealde* (Caxton), *le Welde* (Eltisley), and Schortwalde (Eversden). The third area with wood names is the clayland of the island of Ely which also contains examples of the use of "weald" or "walde" over a number of adjacent parishes.

The volume is accompanied by three maps—a general map showing the names of hundreds and parishes, and two smaller maps showing the distribution of various place-name elements. One shows the distribution of a selection of names indicating woodland (feld, holt, hyrst, leah, weald); the second shows a variety of other elements. To the geographer, interested in the evolution of landscape, a complete map of names indicating woodland would be of paramount interest. It is a pity therefore that this present map does not provide a comprehensive picture. In the first place, not all the woodland elements have

been indicated; thus the text refers to "weald" in more parishes than the map indicates, and there are also other omissions. In the second place, it is difficult to see upon what basis the existing names have been selected; thus the Introduction refers to thirteen examples of names ending in "leah" in the south-east of the county (four of them being parish names), but the map shows only ten in this district. Then again, on a complete wood map, it might be an advantage to indicate some physical and geological features—the distribution of clay, the boundary of the Fenland, or, maybe, a significant contour line. In leaving out this information, the Cambridgeshire volume but follows the general policy of the Society. It has been so abundantly shown how maps of archaeological distributions benefit from indicating some significant physical features, that one cannot help feeling the same might be true of place-name maps. Still, the geographer, although left to compile his own maps from the volumes of the Society, cannot complain; he has at any rate been provided with a wealth of material.

Dr. Reaney's earlier volume on 'The place-names of Essex' had led us to expect a most exhaustive and scholarly treatment of the names of Cambridgeshire, and we have not been disappointed. No casual reading of this volume can do justice to the enormous amount of work and effort that has gone into it. The great wealth of manuscript material at the British Museum, in the cathedral archives at Ely, in various college muniment rooms, in the offices of the Great Ouse Catchment Board, and elsewhere, has been most thoroughly sifted. The result is a worthy successor to Skeat's pioneer volume and another step forward in the remarkable work of the Place-Name Society. H. C. D.

THE GERMAN LEBENSRAUM. By ROBERT E. DICKINSON. (Penguin Special.) *Harmondsworth: Penguin Books*, 1943. 7×4½ *inches; 224 pages; sketch-map. 9d*

Mr. Dickinson's book, published at a price which should secure for it a wide circulation, is packed with information derived from a wide acquaintance with modern German geographical literature. If it is at times difficult reading, this is largely due to the nature of the subject and also no doubt to the circumstances of its publication. Merely as a demonstration of the extent to which German research has been manipulated to support ulterior political aims, it is worth the close attention required.

In the opening chapters the author makes a valiant attempt to disentangle and appraise the many confusing interpretations and implications of the term "Lebensraum." Originally applied to the area within which a state has evolved, it has gradually been extended to signify the area necessary for its existence in peace and war, and thus merges into the conception of national self-sufficiency. In this extended sense, it has been used for years as an instrument of German expansion. Geographers have sought to show that Germany forms the greater part of a natural unit, Central Europe, the characteristic features of the Reich being rounded off, as it were, in the larger area. Others, admitting the impossibility of distinguishing precise geographical limits, have relied on arguments based upon the distribution of language, cultural forms, and economic relations. Mr. Dickinson shows that it is impossible to interpret as a natural unit any area that can properly be defined as "Deutschland," and that many of the cultural and economic traits common to the larger area are part of the general European inheritance. He rightly emphasizes the importance of the time element, which is brushed aside by controversialists anxious to use whatever periods of history will best suit the various sections of their argument. A culture is not static, but develops with the interplay of human and environmental influences, and may

become completely differentiated from neighbouring cultures with a common source in the past.

The second half of the book is a summary of the agricultural, industrial, economic, and historical geography of Germany and neighbouring countries. Though interrelations are often close, the national units have their place in a wider setting, which has endowed them with distinct individualities. This section is perhaps more useful than the earlier, as it summarizes the facts which a post-war settlement should take into account. The author urges that the unity of the various regions which he distinguishes should not be broken up.

G. R. C.

AFRICA

REPORT ON THE FISH AND FISHERIES OF LAKE NYASA. By C. K. Ricardo Bertram, H. J. H. Borley, and Ethelwynn Trewavas. *London: Crown Agents for the Colonies*, 1942. 9½×7½ *inches; 182 pages; illustrations. 12s 6d*

This study of lake Nyasa was carried out in 1939 in conjunction with the nutritional survey of the Protectorate, and though the field work was restricted to some seven months—it was to have been followed up by a further period had the war not intervened—a wealth of information has been collected about the fish and fisheries and is presented in a scholarly and convenient form. The lake covers about one-third of the whole area of Nyasaland, and no part of the country is very far from the shores. Nevertheless the nutritional survey showed that the bulk of the population suffers from insufficient protein. Hence one conclusion of the fisheries survey, that the inshore fisheries of the lake could be increased to three times their present production without damaging the stock of fish, may be of great importance to the future of the African inhabitants. Apart from the inshore fisheries, the production of the great area of open water remains untapped, but this aspect of the problem was somewhat outside the scope of the survey. The stocking of impounded waters in the hills with fish from lake Nyasa was tried on a small scale: perhaps this may be the beginnings of a new fish-farming industry for native food supplies, an activity for which the African colonies provide abounding opportunities.

Of particular interest to geographers are the references to the variations in the level of lake Nyasa. During the first thirty years of this century the average level rose by some 5 feet, probably as a result of silting at the exit of the river Shiré from the lake. In addition there are considerable changes in level from year to year. Rises of level have a serious effect on the life of the lacustrine people, by inundating agricultural land, washing away protective sandspits on which much of the fishing activity depends, and rendering the shore-line impossible for seine-nets. A plea is made for the stabilization of the lake level in the interests of the whole population.

This is the fifth of a series of colonial reports on the fish and fisheries of the great African lakes, previous ones having dealt with lakes Victoria, Albert, Kioga, Edward, Rukwa, and Bangweulu. Together these volumes provide a basis on which it is hoped that the freshwater fish resources will be developed after the war on sound scientific and economic lines. There is a wide gap, however, between the recommendations of experts and the implementing of those recommendations by an already over-busy administrative staff. In the case of lake Nyasa the prospects of development seem to be good, if only because one of the authors of this report, Mr. Borley, is himself an administrative officer resident in Nyasaland, and will no doubt continue to pay attention to the

fisheries. The other two authors, Mrs. Ricardo Bertram and Miss Trewavas, are experts in fisheries and ichthyology respectively. The prominent part which they took in this survey is a good example of the value of enthusiasts, irrespective of sex, in the scientific exploration of Africa.

The volume is well illustrated by carefully chosen photographs; there is a sketch-map of the lake and line drawings of the important kinds of fish. A generous supply of tabulated data occupies some eighty pages, and includes hydrographic notes, lists with native names of the two hundred and twenty-three species of fish so far known from the lake, the composition of the fish catches, and methods of curing fish. It is a pity that the volume was not rounded off with an index. E. B. W.

ECONOMIC AND HISTORICAL GEOGRAPHY

MAN AND HIS WORLD, a course in history and geography. By JAMES MAINWARING. 2 vols. *London: George Philip*, 1940, 1942. $8 \times 5\frac{1}{2}$ *inches;* xii+260+x; xii+350+x *pages; illustrations and sketch-map.* 4*s* 6*d each volume*

Since history and geography are inseparable in fact they should logically be taught together, at any rate in their earlier stages. This is the standpoint taken by the author in these volumes. "The study of human development," he says in his preface, "can be rationally appreciated only by regarding it as the joint product of human and environmental influences, of mutually related historical and geographical factors." The thesis is applied, in two stages, to the evolution of the world from prehistoric to present times. Against the moving background of world history are presented the critical phases of British history, to bring home to the pupil that his country is not, and cannot be, isolated from development in the world at large, nor its progress wholly controlled by factors originating from within, but that it is an element in a world fabric, sharing world movements, affecting them, and being affected by them.

Either part of this double task would be difficult in so limited a space, especially for young minds, yet both have been attempted and both well done. The story is perforce told in very broad outline, with the emphasis on movements rather than on events and personalities, though the last are by no means neglected. Having regard to the complexity of the tale it is simply told. The style is easy and the language well chosen; progress is continuous and smooth, in spite of apparent breaks to gather up threads which might get tangled or lost. It is pursued, too, down to the present troubled times. The study of history and geography is here linked with everyday events, as Professor Valentine says in his foreword, and present-day problems are not avoided because they are controversial. This fair-minded treatment is characteristic of the author's presentation throughout, and is linked with a frankness of opinion sometimes quite startling. Henry VII is described as a "cunning, commercially-minded Welsh Earl." Condemnation of the Mercantile Theory is as whole-hearted as its explanation is clear, though the author is equally quick to show that, in recent times, Britain has outgrown it and has developed from her colonial experiences a genuine regard for the interests of native peoples—experiences and scruples not shared by other powers. Some of these opinions are perhaps rather difficult for the young, but they help to make stimulating and attractive reading and discourage narrow and self-righteous judgments.

Specially interesting chapters are those on Egypt and Greece; the break-up of the Roman Empire; the sturdiness of the Church in the troubled age of Feudalism; medieval China; Marco Polo; world-trade in the Middle Ages—

Genoa, Venice, the Hanseatic League; the causes of rivalry between the Dutch and the English and between the French and the English in the seventeenth and eighteenth centuries.

Maps, diagrams, and pictures are, in the main, well conceived and original, though the draughtsman has had more say than the meteorologist in some maps dealing with climatic factors. An attractive touch is the number, aptness, and significance of etymologies given, *e.g.* patriarch, disastrous, feudal.

No mention is made of the ages of the pupils for whom the books are intended, but they would appear to be for those aged about thirteen to fifteen. For children younger than this the course would be stiff, for the ideas and the principles advanced can be appreciated only by reasonably well-developed minds. The whole series would be excellently adapted to the preparation for an enlightened School Certificate Examination. Indeed, the Joint Northern Universities Matriculation Board has accepted for its own School Certificate Examination a syllabus based upon them. The broad outlook to which the author has given expression may perhaps induce other examination authorities to follow suit, but whether they do or not, here is good work to which teachers of both history and geography should give a warm welcome. W. F. M.

GENERAL

CREATIVE DEMOBILISATION. Vol. I. Principles of national planning. Vol. II. Case studies in national planning. Edited by E. A. GUTKIND. (International Library of Sociology and Social Reconstruction.) *London: Kegan Paul, Trench, and Trubner*, 1943. $8\frac{3}{4} \times 5\frac{1}{2}$ *inches;* xvi+332 *and* viii +280 *pages; illustrations and maps.* 21*s. each volume*

Dr. Gutkind's definitive work on the Principles of national planning has been long waited for, and now that we have it the task of assessing the value of the very numerous particular plans, schemes, suggestions, and counter-suggestions that public interest in reconstruction has called forth will become a far simpler one. The fruit of many years of study and thought, combined with a very considerable practical experience on the Continent between the two world wars, 'Creative demobilisation' is necessarily also based on the author's particular social outlook. He accepts as axiomatic that men work to live, they do not live to work, from which it follows that social planning must take precedence of physical and economic planning. To quote his own words: "The noblest aim of national planning is to shape the environment of man according to his needs as an individual and as a social being." If this be accepted, then the planning and administration of the net resources of land and water must be in the interests of the consumer, a proposition which involves a very radical change in current thought and practice, habituated as we are to the acceptance of economic law as absolute, and of producer interests as necessarily controlling development. It will be recalled however that the Keynes Plan for restoring the smooth running of international trade makes an equally revolutionary demand for reconsideration of accepted dogma on the balance of trade by placing blame for disaster upon the creditor and not solely upon the debtor country. Excessive export surpluses (unless of capital goods for needed developments) are to be deemed instruments of economic aggression.

The introduction to Dr. Gutkind's two volumes is written by Mr. Herbert Read, who points out that the voluminous output of surveys, reports, and pamphlets, valuable though they are (and this Society has made some useful contributions to them), can lead to nothing unless and until they can be integrated into a coherent and coordinated whole—in fact into a National Plan.

Such a plan must be clear in outline, because clear in purpose, and yet it must be flexible in detail, for otherwise it could not be a plan for free men, nor a plan for a world in rapid change.

The Plan as here set out is based on the observed fact that our social life has been disorganized and impoverished by the universal tendency in highly civilized states towards large-scale urban agglomeration. This must be countered by decentralization and dispersal of population, and in accordance with the principle of "consumer interest," the ideal pattern of population from the social and physical standpoints is first thought out, and industrial location is then planned so as to secure this pattern. The spontaneous forms of decentralization by ever-widening peripheral extension of our cities, and of dispersal by what Dr. Inge has characterized as "bungaloid growth" all over the rural scene, are alike condemned. Spaciousness is not incompatible with compact settlement, and Dr. Gutkind has some sensible things to say on what can be achieved by correctly designed blocks of dwellings. Even our newest houses are "directed against the child," and "are almost a preventive of the first order against the rearing of more children." This is said of houses, not flats, for with domestic help increasingly the prerogative of the very few, the third or fourth or fifth child must be considered from the point of view of the housewife's labour equally with that of the family income.

Accessibility saves time and labour. It is indeed the crux of any "decentralization and dispersal" policy. Hence the first practical step in planning is to lay out the linear arteries of transport, the parkways as Dr. Gutkind conceives them, and with them the "negative" areas of non-traffic and non-building, the parks of various sizes. The sections divided off by this primary grid—and it is a green grid—can then be zoned as residential and non-residential districts, which in their turn can be divided up into "neighbourhood units," or groups of such units, furnished according to the numbers of the population with nursery, junior, and higher types of schools, with recreational and administrative facilities, correctly spaced to secure the minimum of unnecessary movement. "Verdure interspersing the town, and within easy reach, and if possible within direct view of every inhabitant" is the ideal, and if all this sounds very theoretical, Dr. Gutkind can cite the actual implementing of such plans, not only in Russia but in the United States, where during the last ten years the idea of positive planning has been taken up with remarkable enthusiasm and with some very striking results.

Whenever and wherever planning is discussed, the problem of the private owner arises, and Dr. Gutkind cuts the Gordian knot by declaring that "The Government must have full power over the land." Not everyone will agree with this solution, or at any rate, agree that the country is ready for it, and conditions in the United States, with its enormous land resources, do not offer any close parallel to conditions over here where every owner of land has in mind the possibilities of "development" in the sense of the substitution of building value for agricultural value.

In the case of a work on a subject almost encyclopaedic in scope, no review can do justice to all its aspects, and the "case studies" dealing with the practical applications of the principles laid down to the actual people, towns, and countryside of Britain must be left to other reviewers. Here we may note only that the principles of "diversification" and of "regionalism" that have been discussed in papers read before this Society are accepted as basic to planning. That regionalism is gaining ground in current thought is witnessed by a recent demand for regional reconstruction and regrouping of administrative units by a conference of the Labour Party, and indeed it is true to say that so rapid are the changes in

current thought which we are witnessing to-day that a book which upon first reading appears revolutionary may on second reading be found, if anything, a little behind the times. E. G. R. T.

Whatever may be the judgment passed on Volume I, and there will be many who will find in it Dr. Gutkind's failure to understand the English viewpoint, it is clear that he has performed an important public service in gathering together the series of essays by others which form Volume II. They cover a wide field and illustrate a number of viewpoints though they do not necessarily form a coordinated whole: in many cases they present only one side of problems which are, in fact, very complex.

The twenty-two essays are grouped under the four headings of Human Geography, Agriculture, Industry, and Decentralisation and dispersal. Professor A. W. Ashby contributes both the introductory essay on "The English countryside" and that on "Economic utilization of land in planning processes"; we may be particularly grateful to him for these outstandingly lucid and well-balanced contributions. With most that he has to say there will be a wide measure of agreement though he adopts a complacent attitude towards "sub-urbanization," which a dweller in Aberystwyth can scarcely fear as much as those who are being swallowed up in its tide. He contends that industry and housing require relatively small areas of land, which is true of properly planned development but not of the spoliation which we were suffering before the war, and also that the taking of land of the very highest productivity "is unlikely to occur except in relation to small areas"—the reverse of the truth. Mr. J. R. Currie, of Dartington Hall, has a substantial contribution on future Agricultural Policy in which he suggests a Department of Agricultural Planning within the Ministry of Agriculture, under a Director-General, and makes a number of practical suggestions for its work. Incidentally the Ministry now has a General Planning Division.

In contrast to a number of very general contributions, Mr. Geoffrey Clark, who is Planning Officer and Consultant for Dorset, says in a few pages exactly what a rural county can and should do in a national scheme. Although much has been said and written regarding national parks for Britain, it is for almost the first time that we are given the essential if mundane details of organization and cost together with plans of roads and even a projected holiday camp fitted to a particular site by Mr. Cedric Page. He proposes a national coastal park for North Cornwall. The cost of such an acquisition, £1,212,000, is negligible when compared with our current daily expenditure on revenue-account, but the figure makes it clear why such a provision for recreation of outsiders cannot be made by the small local authorities within whose area the desired tracts lie. Mr. E. G. Bowen deals with Reconstruction in Wales, stressing the need to secure a better balance between the overpopulated industrial south and the rest, while Professor A. G. Ogilvie and Dr. A. Geddes deal with Rural Scotland, stressing the desirability of greater home food production and the revival of rural industries.

Among the contributions to the section on Industry are Professor J. H. Jones, Mr. D. B. Williamson, and Mr. K. H. Johnston. In the latter's contribution on railway electrification, his comparison with America may be ill-chosen, but he has some interesting figures on both goods and passenger transport. Mr. J. R. Beard's Presidential Address to the Institution of Electrical Engineers is reprinted and, in diplomatic language, confirms what most of us feel, that the present system of electricity supply companies hinders the benefits of the grid system reaching the individual consumers.

So many of the essays in the volume show a continued cleavage between the viewpoints of geographer and economist, agriculturalist and planner that we turn gratefully to Mr. Gordon Payne's article on research for planning in Gloucestershire, where he really attempts a balanced assessment of the factors involved. Mr. D. E. E. Gibson, architect for the new Coventry, has a few pages on the Reconstruction of towns. Mr. A. E. Smailes has three articles, more theoretical, on the Redistribution of population and settlement, and on the debatable question of the balance of industry in a given community. A town which relies entirely for its prosperity on one industry may be in a dangerous position, but to class Northampton, High Wycombe, Wolverton, and Scunthorpe as ill-balanced communities rather begs the whole question.

Altogether this is a book which deserves and will repay careful study.

L. D. S.

WEST INDIAN SCENES. By HELEN CAMERON GORDON (Lady RUSSELL). *London: Robert Hale,* 1942. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches; 252 pages; illustrations. 12s 6d*

The author made an extensive trip through the West Indies, apparently in 1937 (she is rather vague about her dates), and seems to have compiled her book from the journal she kept during her tour together with information she has gathered from elsewhere. Her bibliography discloses that her reading has not been up to date, for she fails to mention a number of relevant works published in recent years; for example she deals at some length with the subject of voodoo and obeah, but makes no reference to Mabel Steedman's valuable book 'Unknown to the world—Haiti.' Nor does she refer to Sir Algernon Aspinall's numerous books, or to Mr. Alec Waugh's 'The coloured countries,' or Sir Frederick Treves' 'Cradle of the deep.' She would also have found rich historical material in Bryan Edwards, Lady Nugent, Froude, Trollope, and Charles Kingsley.

On the other hand she has had access to unpublished MSS., particularly on Barbados and Dominica, and has collected a great deal of illuminating and romantic material about the islands (excepting Jamaica, which she does not appear to have visited) and this, together with her own experiences, makes a book which those who are not too critical may enjoy. Times and conditions change, but the loveliness of the islands endures, and it is the local scene which the author is at pains to set before her readers, as when, describing the grounds of Government House, Barbados, she tells us "the interlaced trees and luxuriant creepers mutually agreed to provide such a wealth of greenery as is adequate shelter for the delicate fronds they guard with tender care."

There is no map to the book, and no index, but some useful appendices, including a list of the islands, their nationality and chief towns, and a collection of West Indian sayings.

O. R.

THE MONTHLY RECORD

ROTHAMSTED 1843–1943

On 21 July 1943 the Rothamsted Experimental Station celebrated the centenary of its foundation. A large number of delegates from scientific institutions enjoyed the hospitality of the Director and Committee and were shown admirably staged demonstrations in the ten departments of the new laboratory and on the experimental farm. The first section of an excellent pamphlet describes the origin of the station in the researches of John Bennet Lawes, a young heir of the family which had owned the ancient manor of Rothamsted since 1623. He had already in 1842 invented "superphosphate," established a factory for it, and founded the fertilizer industry. In the following year he brought in the chemist J. H. Gilbert, and they worked together for sixty years, largely on the chemical side. In 1878 Lawes had provided a trust endowment of £100,000 and given a long lease of the experimental fields to the Trust. In the directorship of A. D. Hall, from 1902 to 1912, the basis was widened and the staff was enlarged to deal with the bacterial fixation of nitrogen, the effect of other than the classical nutrients on growing plants, and the sterilization of soil. The additional funds were provided by a City Company and private benefactors. In 1912 John Russell became the Director; he realized that single-handed investigation of any subject would no longer suffice, organized the Station in departments, and established the principle that "if the work were trimmed and restricted to give it a practical look, the results would in the long run be disappointing, however attractively 'practical' they might be made to look by judicious treatment."

A Society for the Extension of the Rothamsted Experiments was founded, provided for at least half the capital expenditure, and in 1934 raised the whole money for the purchase of the estate of about 500 acres. Thus the permanent establishment of this oldest and most renowned of all agricultural research stations was entirely due to the beneficence of its founder and its friends. But the cost of staff and maintenance outran these resources, and since 1911 increasing grants for this work of supreme national importance have been made by the Ministry of Agriculture and the Development Commission.

The centenary pamphlet 'Rothamsted 1843–1943' gives concise accounts of the past and present work of each department. The Soil Chemistry people, with the aid of the Statistical Department, have been busy formulating a war-time fertilizer policy, for efficient distribution between crops, soils, and districts at various levels of supply. The micro-biologists have devised effective methods of purifying the effluents from sugar beet factories and large dairies. The botanists, with the chemists, have found that minute traces of the less common elements, such as boron and molybdenum, present in Chile saltpetre but not in artificial fertilizers, are essential to the health of certain vegetables. The plant pathologists have installed an electron microscope to photograph the particles of plant viruses with especial attention to the field problems of potatoes and sugar beet. The Bee Department have found how orchard trees may be sprayed even with arsenic without damage to the pollinating honeybees. The Insecticide Department have reared large broods of insects and found substitutes for Derris in other tropical plants used for fish poisons. The statisticians have developed the methods of both sampling and large-scale survey, and applied them to many military problems as well as to those of their colleagues. Such are a very few examples of the scientific results of great present and more future national importance obtained by Sir John Russell's team of specialists in the departments of his laboratory.

Meanwhile the field experiments begun by Lawes have been continued, and many new ones instituted. An important principle, formulated in 1919 and adopted for all new experiments in 1926, is that each treatment is applied to a number of plots, and treatments are allotted to plots at random. The variation between similarly treated plots measures the experimental error, and the random arrangement ensures that this is statistically unbiassed. One-fifth of the celebrated Broadwalk field is now left fallow annually to keep down weeds, but otherwise the one hundred years' experiment is continuing unchanged, and many new ones developed.

The pamphlet 'Rothamsted 1843–1943' is placed in the Library. It makes a most impressive account of well-organized and equipped research of immense national importance, and anyone engaged in scientific work may read it with profit.

THE GEOGRAPHY OF THE ATLANTIC

In the Library of the Society there are copies both of the first edition of Gerhard Schott's 'Geographie des Atlantischen Ozeans' (Hamburg, 1912), reviewed in the *Journal* for March 1913, and of the second edition, published in 1926. A third edition has just been produced (Hamburg, 1943). It follows much the same lines as its predecessors, but there are one or two significant alterations in the order in which the subject is presented, and parts of the book, notably the regional descriptions, have been extensively revised. Most of the changes are for the better: thus, at last, Schott has decided that in oceanography it is difficult, if not impossible, to separate "climatic" from "natural" regions. He now deals only in natural regions, and the geographical limits which he ascribes to them are likely to be much more acceptable to oceanographers and marine meteorologists than those given in the earlier editions. While he does not particularize as much as we would wish about the criteria employed in dividing up the Atlantic into nineteen regions, comparison of them with salinity, sea and air temperature and wind maps soon reveals the parentage of most of them.

Almost all the climatic and oceanographical maps contained in the work have been corrected to bring them into harmony with the findings of the *Meteor* Expedition of 1925–27. Indeed, so impressed is Schott by the magnitude of his fellow-countrymen's achievements in the realm of oceanography that he sometimes ignores researches that are not German. Thus the publications of the Discovery Committee are, at best, mentioned *en passant;* on some matters, for example plankton distribution, a subject which Professor A. C. Hardy has made all his own, they are not even cited. It is true that in dealing with the circulation of the upper atmosphere Schott quotes the work of the French *Carimaré* Expedition, but he ignores the growing volume of American literature on the subject and he appears not to know of the French and American upper air soundings which have been made regularly in the West African and Caribbean sectors during the past ten years or so. The result is that his reconstruction of the air-stream lines at the 3000–4000-metre level over the North Atlantic is not as satisfactory as it might have been: thus the average speed of the prevailing easterly wind at that height over the Caribbean during the winter (October–May) is nearer 6 metres per second than the figure of 0–2·5 metres which he gives to it, while the wind at 4 kilometres over Southern England in the same season is nearer north-west than north-east.

One rather conspicuous shortcoming—in a volume devoted largely to the physical aspects of the Atlantic, and running into 450 pages—is the treatment of sea and swell. The subject of waves is broached only in the most incidental

fashion, and at no point is any attempt made to consider the vexed question of their development, persistence and decay, size and speed of travel, etc. This reluctance to cope with a problem which has come increasingly to the fore in recent years is all the more surprising in view of the work carried out by Schumacher in the *Meteor*. G. H. T. K.

THE REPORT OF THE SCOTT COMMITTEE

Professor S. R. Dennison has called the Editor's attention to a passage in the discussion on the Report of the Scott Committee, published in the *Journal* for January 1943, in which Dr. Dudley Stamp remarked that the Minority Report misrepresents the views expressed by the Majority Report, yet the latter makes no attempt to answer the points raised, and explains that the Minority Report was not circulated to the Committee as a whole, who saw it for the first time when it was published.

The author of the Minority Report was Professor S. R. Dennison. He writes that "this has been taken as implying that I deliberately withheld the Minority Report from my colleagues, presumably in order to be able freely to misrepresent their views." Dr. Stamp has expressly assured Professor Dennison that there was no intention of giving any such impression, and the Editor, associating himself with this assurance, regrets that the passage in question should have been interpreted as reflecting upon the procedure adopted by Professor Dennison, which did not depart from the normal procedure of Government Committees in these matters.

A PLANTATION IN HAITI

In his monograph, 'Une plantation de Saint-Domingue: la sucerie Galbaud du Fort' (Cairo, 1941), Mons. G. Debien narrates the fortunes of the plantation during the period of French rule, using the private papers and accounts of the proprietors, preserved at Angers. He gives a clear outline of the economy which developed on the coastal plains of the island. At first a little tobacco was grown on small and scattered holdings cleared of forest by fire and abandoned after a few years: gradually as capital became available, mainly from the west of France, these were replaced by relatively few large and highly organized estates. After indigo and coffee had been tried, all efforts were directed to the production of sugar. This industry had periods of great prosperity, but finally collapsed during the economic and social troubles of the late eighteenth century. Among the causes of this decline were the constant wars which cut off the island from its French market, and the prevalence of absentee owners. The sole object of the agents who worked these estates was to increase the apparent returns, and they consequently sank too much capital in the undertakings, and indulged in speculative ventures. One of the heaviest handicaps however appears to have been the uneconomic slave labour: after the slaves had been bought, many of them died through failing to become acclimatized, others were lost through epidemics and accidents at work, and some were constantly absconding. Throughout the period the price of slaves was rising, and their quality declining. The author adds to these economic causes, the instability of the climate, but will not allow that concentration on a single crop was an important cause of disaster, pointing out that much land was held in reserve, and other crops grown to support the estate workers.

CHANGES IN THE PROVINCES OF THE DOMINICAN REPUBLIC

In the *Journal* for February 1943 recent changes in the provinces of the Dominican Republic were noted. We have since been informed by the Foreign

Office that another new province, Bahoruco, has been created. This province, which was established from 16 May 1943, comprises the districts of La Descubierta, Neiba, Duvergé, and Tamayo, and consists roughly of the north-western quarter of the province of Barahona including lake Enriquillo. The change seems to be part of a general policy of breaking up the larger districts. Since 1938 the number of provinces has been increased from twelve to seventeen: Benefactor was created in 1938, Libertador and Arzobispo Merino in 1939, and San Rafael and Bahoruco in 1943.

OBITUARY

FLIGHT-LIEUTENANT H. A. MATTHEWS, R.A.F.V.R.

The death of H. A. Matthews will be felt especially by his former students and colleagues of the three colleges of the University of London with which he was associated. Born in 1899, he early acquired an interest in Geography, and in 1918 he entered the newly established Honours course in that subject at University College, London, under Professor L. W. Lyde. In 1921 he obtained a First Class in the first Honours degree examination in Geography held by the University of London. Shortly afterwards he joined the teaching staff of University College, where he commenced the researches in Climatology. In 1928 he was appointed to a lectureship at Birkbeck College, and in 1930 he obtained a PH.D. degree for a thesis entitled "Climate and climatic regions of Chile with special reference to Köppen's classification of climate." He published several papers in the following years, dealing principally with problems of climatic classification, of variability from the mean, and of micro-climatology. These studies were continued at Bedford College for Women, where he was appointed lecturer in 1937. In all three colleges he did much to stimulate the interest of students in climatology and to improve the standard of work in the subject. He also started courses for post-graduate research, and it is noteworthy that many of his students have since rendered good service in the meteorological branches of the R.A.F. and other services. In 1940 he was granted leave of absence from Bedford College to join the Meteorological Branch of the Royal Air Force. Although in ill-health for the last few months of his life, he insisted on carrying out his duties, so that his death from heart trouble came as a shock to his friends.

M. R. M.

Twenty-third Meeting, 7 June 1943. The President in the Chair

Elections: H. Murray Campbell; George Boulton Cotton, J.P.; Mrs. J. W. A. Grieve; Miss Cuchlaine Audrey Muriel King; Mr. Frank Lane; Miss Freda Lingstrom; Captain Richard Oliver Mason; 2/Lieut. Jerzy B. Myslinski; Etim Ekong Nyon; Miss Norah Mary O'Sullivan; Mrs. Lilian Rainford; Frederick Rasey; Richard George Read; John Saltmarsh, M.A.; Miss Elisabeth Fisher Saunders; Major Laurence Paget Cape Sheen; Flying-Officer John Brightwen Shelly, R.A.F.V.R.; Henry Donald Macintyre Smith; Lieut. George Edwin Gordon Webber, R.C.E.; Group Captain the Hon. Thomas Walter White, D.F.C., V.D.; Richard Goddard Wilson

Paper: Northern marches of Yunnan. By Mr. Patrick FitzGerald

Annual General Meeting, 21 June 1943. The President, The Rt. Hon. Sir George Clerk, in the Chair

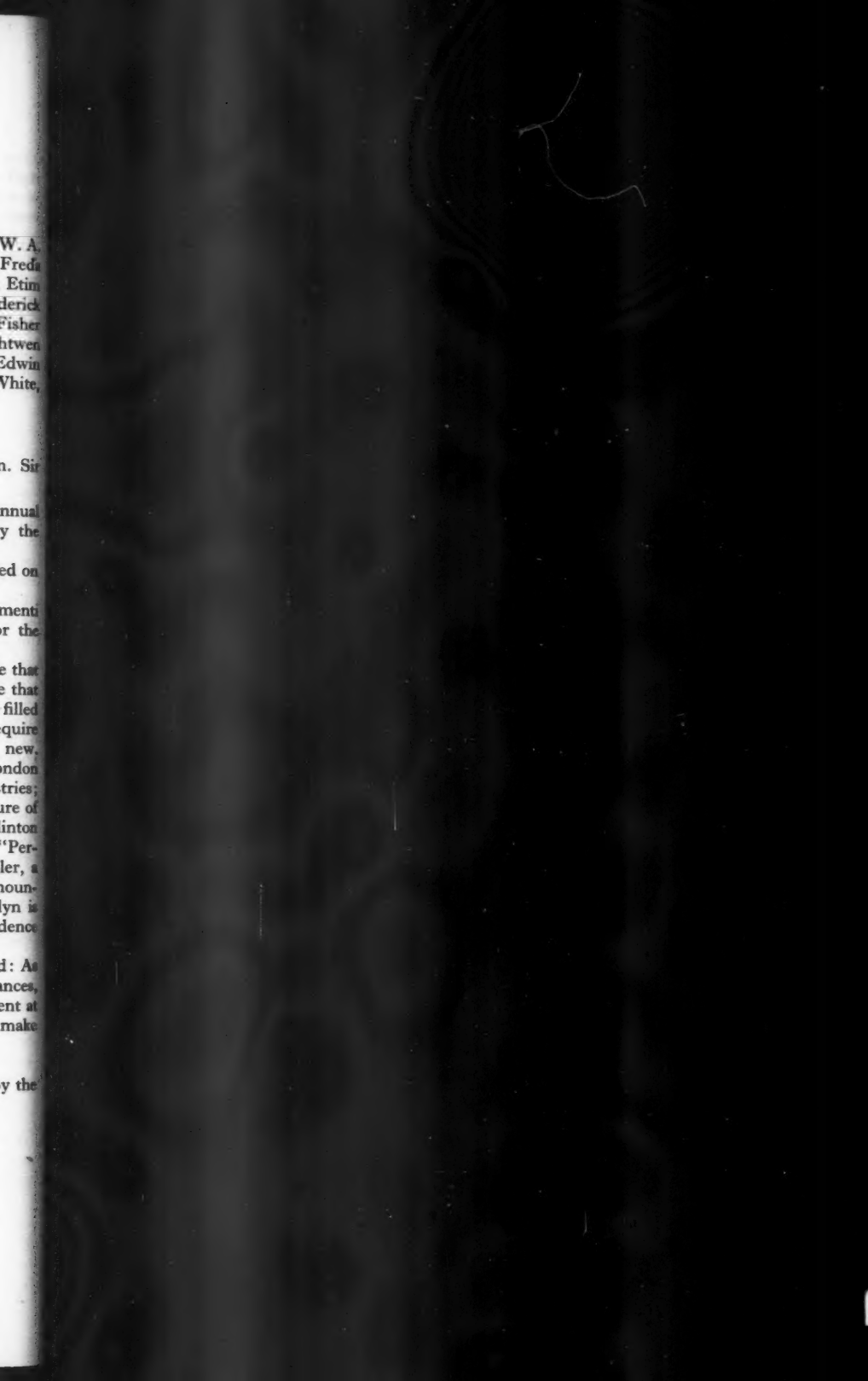
The Hon. Secretary (Mr. W. L. Sclater) read the Minutes of the Annual Meeting held on 22 June 1942, which were confirmed and signed by the President.

The President then delivered the Presidential Address, which is printed on pp. 1–5.

Visitors having withdrawn, the President appointed Brigadier Clementi Smith and Mr. Frederick Adam to act as scrutineers of the ballot for the Council and Officers for the ensuing year.

In regard to the balloting list the President said: The Bye-laws require that of the Vice-Presidents two shall be past Presidents. The Council propose that the place left vacant by the death of Sir Francis Younghusband should be filled by the election of Admiral Sir William Goodenough. The Bye-laws also require that seven of the twenty-one names proposed for the Council should be new. The names so proposed are those of Mr. S. H. Beaver, lately of the London School of Economics and now geographical adviser to one of the Ministries; Mr. Patrick FitzGerald, who only a fortnight ago gave us at our last lecture of the session further proof of his wide knowledge of China; Brigadier Sir Clinton Lewis, late Surveyor-General of India; Sir Percy Loraine, whose "Perspectives of the Near East" are fresh in our memory; Dr. Austin Miller, a physiographer of repute; Major N. E. Odell, geographer and famous mountaineer; and Mrs. J. A. Steers, who under her maiden name of Wanklyn is well known to us as an authority on Eastern Europe. I have every confidence in recommending those new names to the electors at this meeting.

The President, in submitting the Annual Report of the Council, said: As you will have noticed, our numbers remain satisfactorily steady and our finances, so far as any finances can be called steady in these days, are at the moment at least in the same happy position. I do not know if any Fellow wishes to make any observations on the Report? If not, I take it the Report is adopted.

The Annual Report was adopted without further comment.

The scrutineers informed the President that the candidates proposed by the Council had been elected (see list, p. iii), and the meeting terminated.